OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov
www.ohp.parks.ca.gov

July 16, 2010

Reply In Reference To: EPA100624A

David Albright
Ground Water Office
United States Environmental Protection Agency
25 Hawthorne Street
San Francisco, CA 94105-3901

RE: Section 106 Consultation for Proposed Underground Injection Control Permit, Birds Landing, Solano County, CA

Dear Mr. Albright:

Thank you for consulting with me pursuant to 36 CFR Part 800, the implementing regulation of Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470f), as amended. On behalf of the Environmental Protection Agency (EPA), you are seeking my concurrence that the above-referenced project will not affect historic resources.

The EPA is processing an Underground Injection Control permit application for C6 Resources, an affiliate of Shell Oil Company. The permit will authorize the drilling and construction of one injection well and one monitoring well approximately two miles beneath the ground surface for the purpose of sequestering carbon dioxide as part of an experimental program. Surface disturbance will be limited to the construction of a drill pad and well penetration. The proposed project area is in a rural area and is currently used for wheat farming and cattle grazing. In addition to your letter, you have provided the following report in support of this undertaking:

- *Archaeological Survey and Assessment of C6 Resources LLC's Proposed Northern California CO2 Reduction Project, Solano County, CA* (William Self Associates, Inc.: September 2009)

This study summarizes identification efforts undertaken within the direct and indirect Area of Potential Effect (APE). Qualified staff of William Self Associates conducted Native American consultation, a records search at the Northwest Information Center, and pedestrian survey of the project area. The results of the records search and visual inspection of the project area indicate that the likelihood of encountering significant cultural resources is very low. No prehistoric or historic cultural features or materials were observed in the survey area. Having reviewed this information, I have the following comments:

1) I concur that the Area of Potential Effects (APE) has been properly determined and documented for both project alternatives pursuant to 36 CFR Parts 800.4 (a)(1) and 800.16 (d);

EPA100624A

2) I further concur that the finding of No Historic Properties Affected is appropriate for both alternatives pursuant to 36 CFR Part 800.4(d)(1) and that the documentation supporting this finding has been provided pursuant to 36 CFR Part 800.11(d);

3) Be advised that under certain circumstances, such as an unanticipated discovery or a change in project description, you may have additional future responsibilities for this undertaking under 36 CFR Part 800.

Thank you for considering historic resources during project planning. If you have any questions or comments, please contact staff historian Tristan Tozer at (916) 445-7027 or email at ttozer@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

The Office of Historic Preservation will be moving to a new location as of July 14, 2010. The new address for the office will be 1725 23rd Street, Suite 100, Sacramento CA 95816. Please update your records accordingly. The entire office will also be receiving new phone numbers, and those numbers will be posted on our website at www.ohp.parks.ca.gov when they are active.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

July 1, 2010

Mr. Ryan Olah
Attention: Andrew Raabe
Coast-Bay Branch
U.S. Fish and Wildlife Service
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Re: Underground Injection Control Permit - Informal Consultation Request

Dear Mr. Olah:

The United States Environmental Protection Agency, Region 9 (EPA) is preparing to issue a proposed Underground Injection Control permit for C6 Resources, an affiliate of Shell Oil Company. The permit would authorize the drilling and construction of one injection well and one monitoring well. These wells are proposed to be drilled to an approximate depth of two miles beneath the ground surface for the purpose of sequestering and monitoring carbon dioxide (CO_2) as part of an experimental program funded in part by the U.S. Department of Energy. This is a research project to investigate the geologic formation and the behavior of CO_2 in the formation. The only surface disturbance associated with the proposed UIC permit authorization will be construction of a drill pad and penetration of the ground with the two wells. The site is used for dry land farming (wheat and grazing) and is in a wind energy farm. The site is plowed every year or two by the landowner. The site is relatively flat and on a ridge, and is not near any structures or water bodies. The site is located near Birds Landing, Solano County, CA. A map of the project area is enclosed.

Under the Section 7 of the Endangered Species Act (ESA), EPA is required to ensure that a potentially permitted activity is not likely to jeopardize the continued existence of any endangered or threatened species, or adversely affect its critical habitat. Enclosed is a biological resources report prepared by C6 for this project.

EPA Determination

EPA has reviewed the attached report and evaluated the site and vicinity with regard to threatened or endangered species or their habitat. Based on these considerations, and as required by Section 7 of ESA, EPA believes that this project will have a less-than-significant impact.

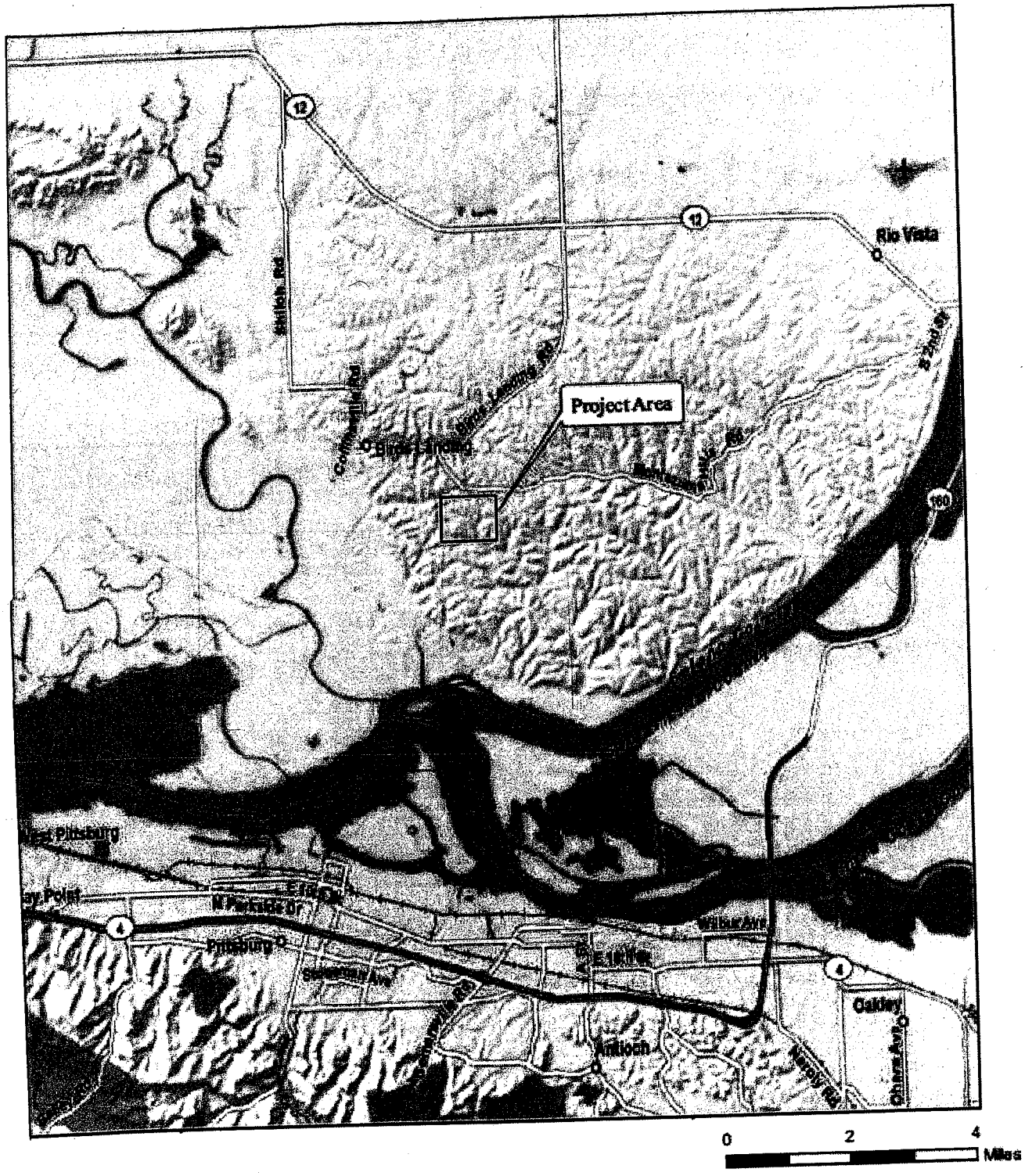
We are requesting your evaluation of and concurrence with, our determination. We would like to issue a proposed Underground Injection Control permit for C6 Resources as soon as possible. Thus, any expediting of your Office's consideration of this matter would be greatly appreciated.

If you have any questions, please call me at (415) 972-3971 or Michele Dermer of my staff at (415) 972-3417.

Sincerely,

David Albright
Manager, Ground Water Office

Enclosures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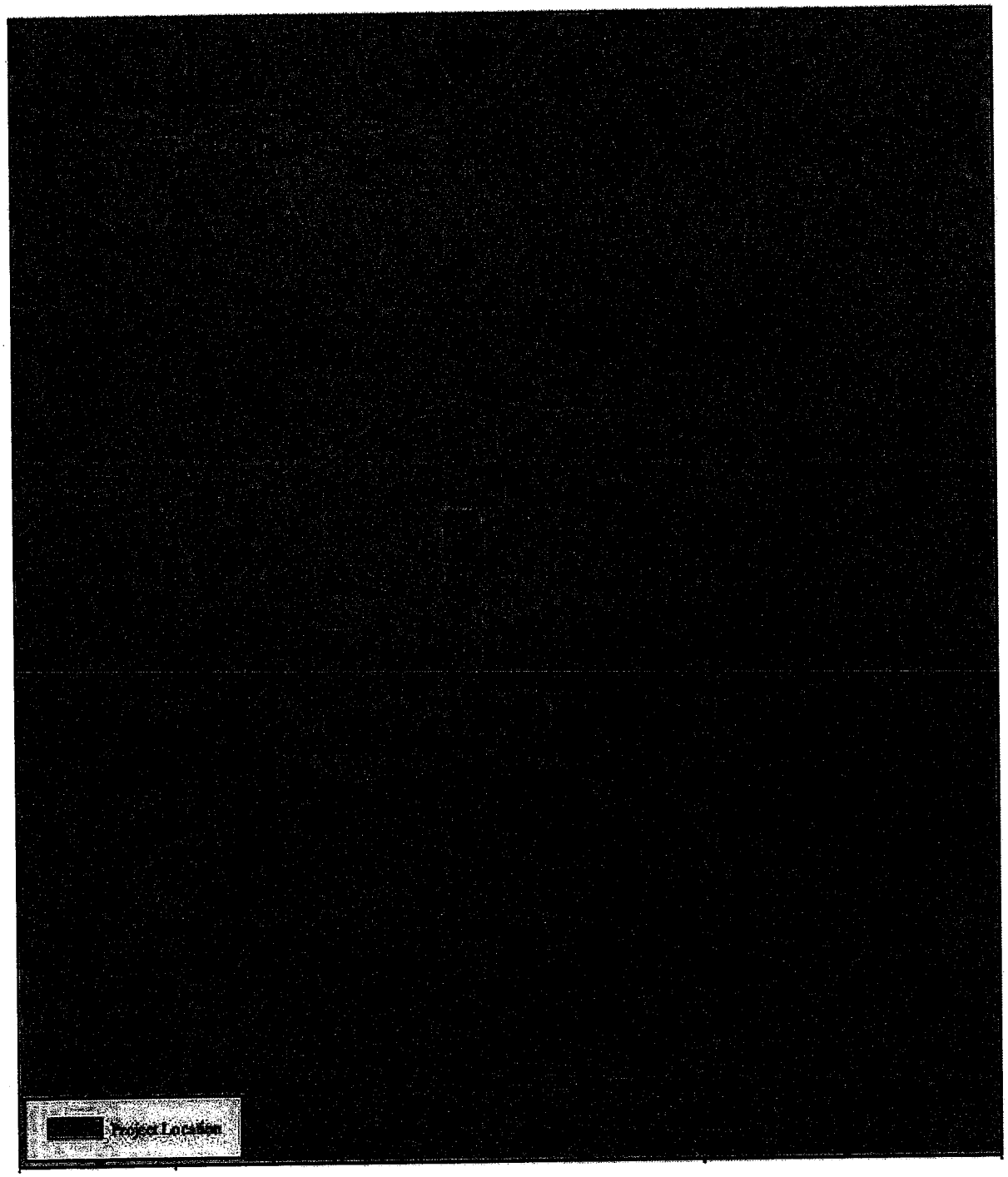
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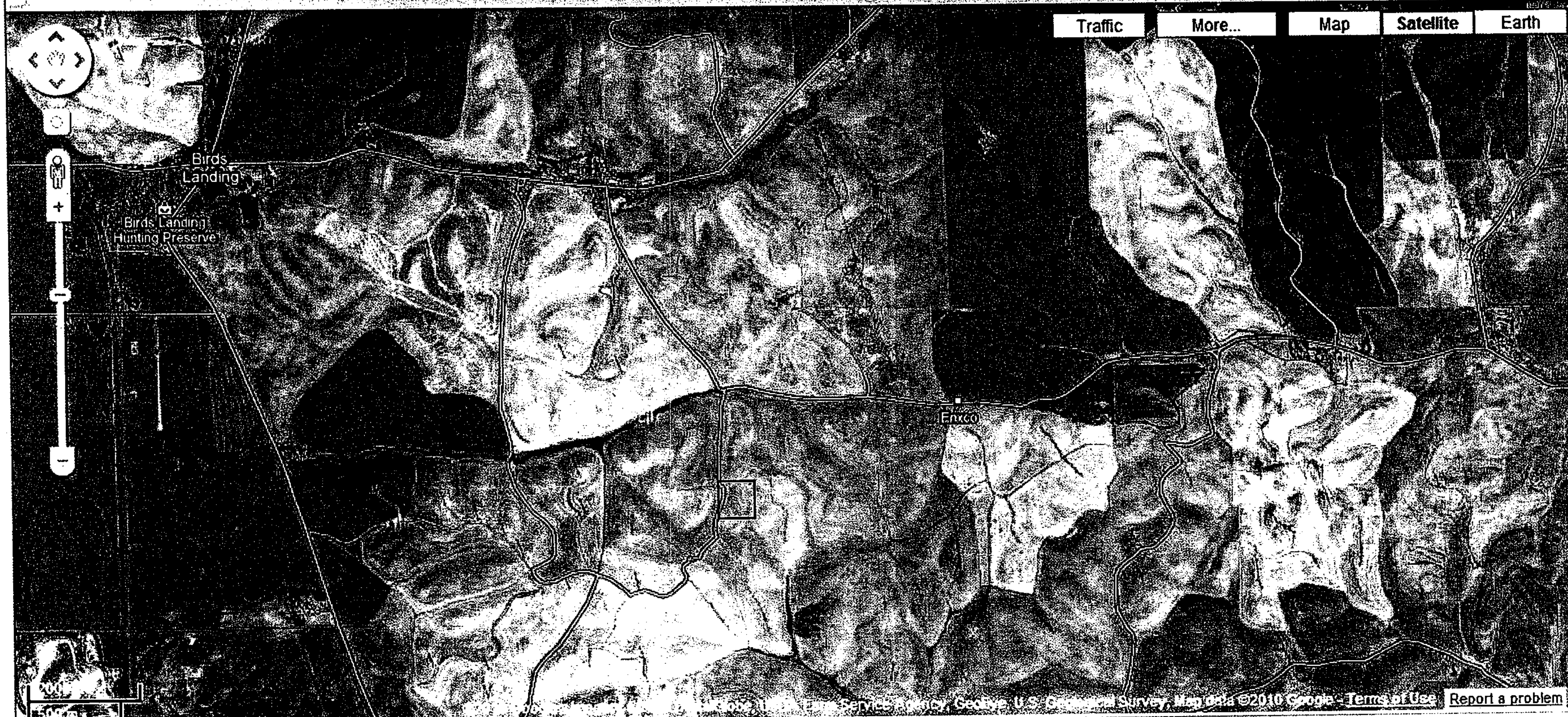

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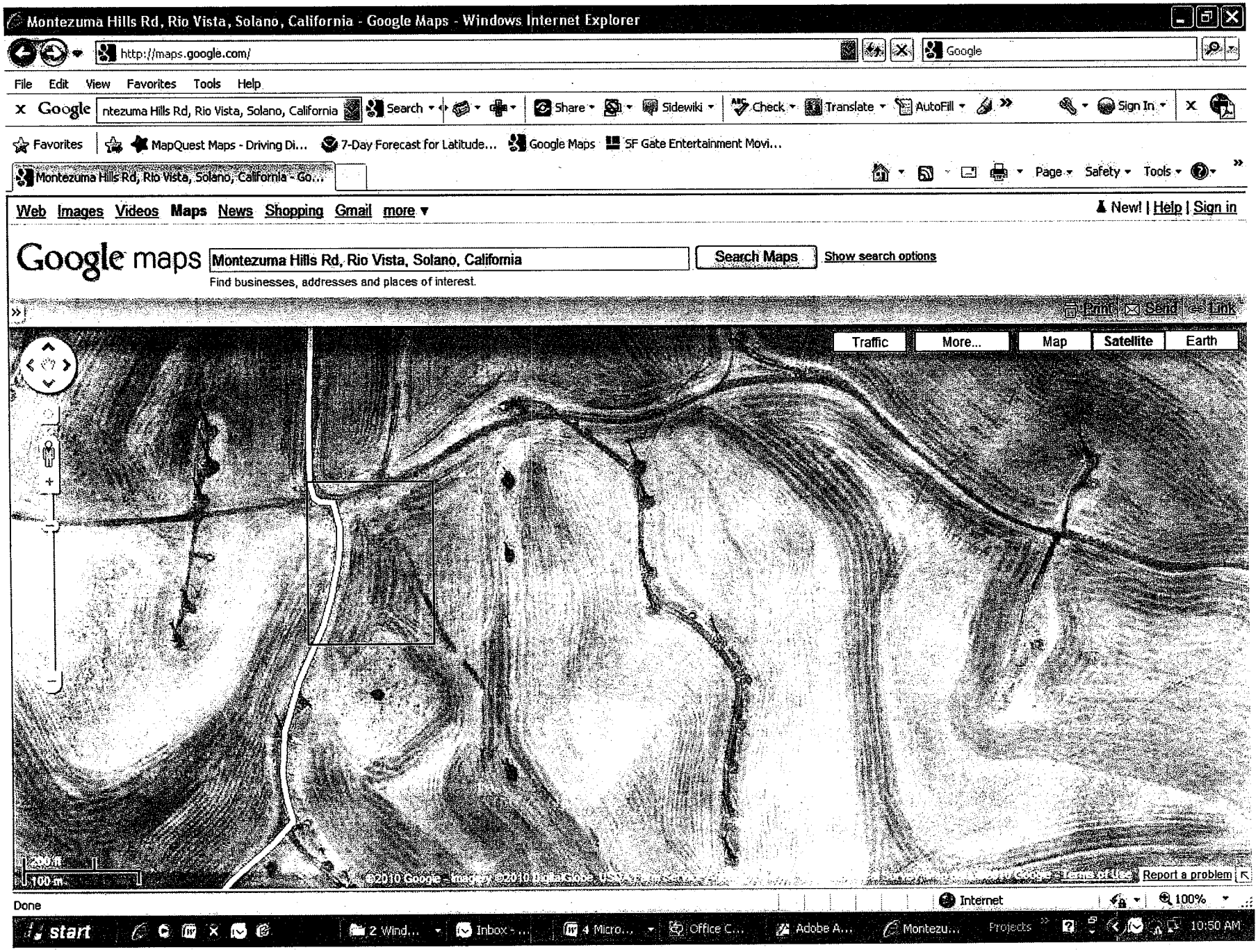
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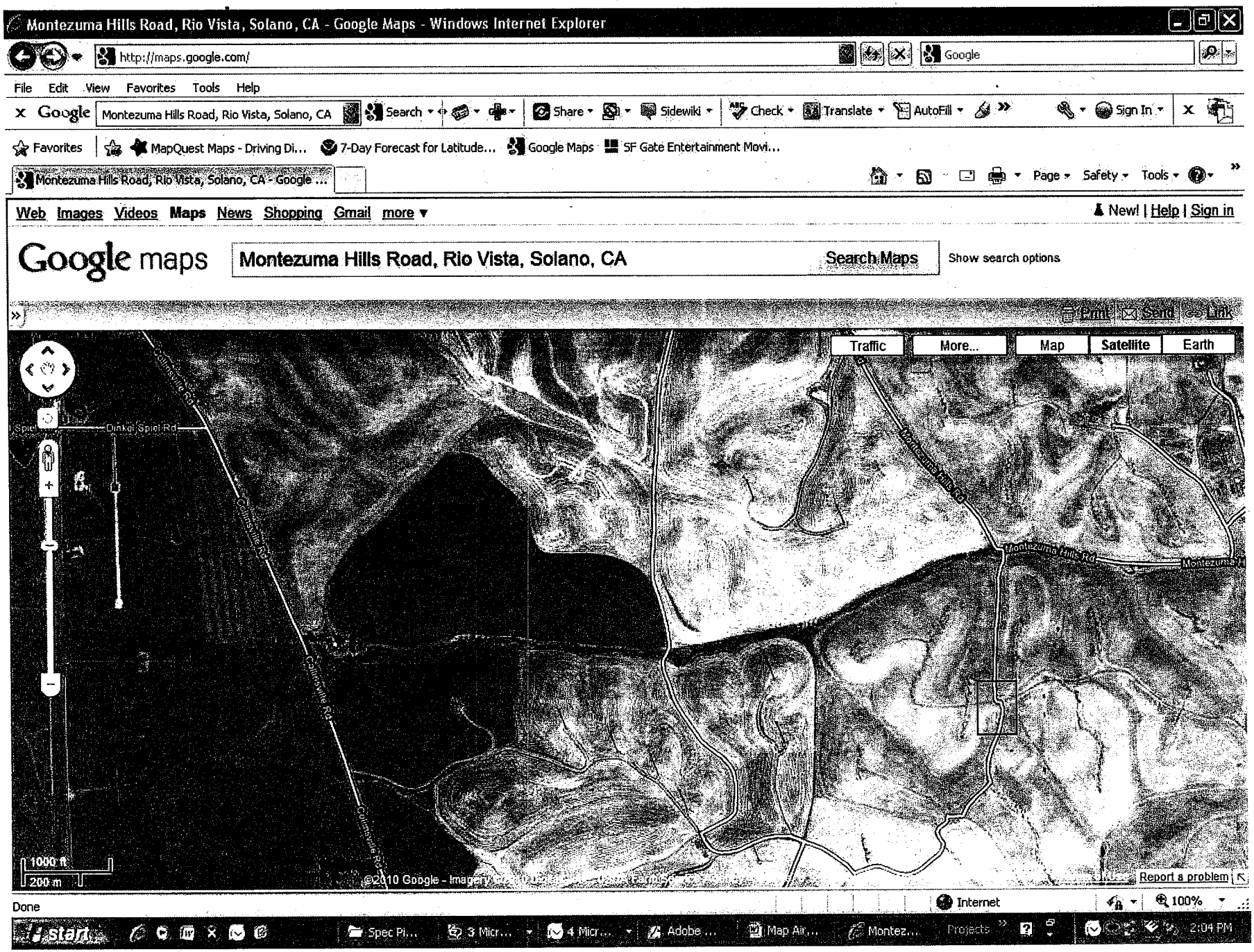
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ENVIRONMENTAL CONSULTANTS

December 30, 2008

Fritts Golden, AICP
Aspen Environmental Group
235 Montgomery Street, Suite 935
San Francisco, California 94104

RE: **Northern California CO2 Reduction Project Well Pad Biological Resources Assessment**

Dear Mr. Golden,

On December 18, 2008, WRA, Inc. performed an assessment of biological resources at a proposed 8-acre well pad (Project Area) associated with the Northern California CO2 Reduction Project in Solano County, California. The purpose of the assessment was to gather information necessary to complete a review of biological resources under the California Environmental Quality Act (CEQA). This report describes the results of the field visit, which assessed the Project Area for the (1) potential to support special status species; and (2) presence of other sensitive biological resources protected by local, state, and federal laws and regulations. If special status species were observed during the field visit, they were recorded. Specific findings on the habitat suitability or presence of special status species or sensitive habitats may require that protocol level surveys be conducted. This report also contains an evaluation of potential impacts to special status species and sensitive biological resources that may occur as a result of the proposed project and potential mitigation measures to compensate for those impacts.

A biological assessment provides general information on the potential presence of sensitive species and habitats. The biological assessment is not an official protocol level survey for listed species that may be required for project approval by local, state, or federal agencies. This assessment is based on information available at the time of the study and on site conditions that were observed on the date of the site visit.

REGULATORY BACKGROUND

The following sections explain the regulatory context of the biological assessment, including applicable laws and regulations that were applied to the field investigations and analysis of potential project impacts.

Special Status Species

Special status species include those plants and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford protection to both listed and proposed species. In addition, California Department of Fish and Game (CDFG) Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern, sensitive species included in USFWS Recovery Plans, and CDFG special status invertebrates are all considered special status species. Although CDFG Species of Special Concern generally have no special legal status, they are given special consideration under the

California Environmental Quality Act (CEQA). In addition to regulations for special status species, most birds in the United States, including non-status species, are protected by the Migratory Bird Treaty Act of 1918. Under this legislation, destroying active nests, eggs, and young is illegal. Plant species on California Native Plant Society (CNPS) Lists 1 and 2 are also considered special status plant species. Impacts to these species are considered significant according to CEQA. CNPS List 3 plants have little or no protection under CEQA, but are included in this analysis for completeness.

Critical Habitat

Critical habitat is a term defined and used in the Federal Endangered Species Act as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The FESA requires federal agencies to consult with the USFWS to conserve listed species on their lands and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with critical habitat, federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery. In many cases, this level of protection is similar to that already provided to species by the FESA "jeopardy standard." However, areas that are currently unoccupied by the species but which are needed for the species' recovery, are protected by the prohibition against adverse modification of critical habitat.

Sensitive Biological Communities

Sensitive biological communities include habitats that fulfill special functions or have special values, such as wetlands, streams, and riparian habitat. These habitats are protected under federal regulations (such as the Clean Water Act), state regulations (such as the Porter-Cologne Act, the CDFG Streambed Alteration Program, and CEQA), or local ordinances or policies (City or County Tree Ordinances, Special Habitat Management Areas, and General Plan Elements).

Waters of the United States

The U.S. Army Corps of Engineers (Corps) regulates "Waters of the United States" under Section 404 of the Clean Water Act. "Waters of the U.S." are defined broadly as waters susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies, including wetlands), and their tributaries (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands stated in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Areas that are inundated for sufficient duration and depth to exclude growth of hydrophytic vegetation are subject to Section 404 jurisdiction as "other waters" and are often characterized by an ordinary high water mark (OHWM). Other waters, for example, generally include lakes, rivers, and streams. The placement of fill material into "Waters of the U.S." (including wetlands) generally requires an individual or nationwide permit from the Corps under Section 404 of the Clean Water Act.

Waters of the State

The term "Waters of the State" is defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The Regional Water Quality Control Board (RWQCB) protects all waters in its regulatory scope, but has special responsibility for wetlands, riparian areas, and headwaters. These waterbodies have high resource value, are vulnerable to filling, and are not systematically protected by other programs. RWQCB jurisdiction includes "isolated" wetlands and waters that may not be regulated by the Corps under

Section 404. "Waters of the State" are regulated by the RWQCB under the State Water Quality Certification Program which regulates discharges of fill and dredged material under Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act. Projects that require a Corps permit, or fall under other federal jurisdiction, and have the potential to impact "Waters of the State," are required to comply with the terms of the Water Quality Certification determination. If a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to "Waters of the State," the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements.

Streams, Lakes, and Riparian Habitat

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by CDFG under Sections 1600-1616 of California Fish and Game Code. Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term stream, which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as follows: "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG ESD 1994). Riparian is defined as, "on, or pertaining to, the banks of a stream;" therefore, riparian vegetation is defined as, "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFG ESD 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFG.

Other Sensitive Biological Communities

Other sensitive biological communities not discussed above include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFG. CDFG ranks sensitive communities as "threatened" or "very threatened" and keeps records of their occurrences in its Natural Diversity Database. Sensitive plant communities are also identified by CDFG on their *List of California Natural Communities Recognized by the CNDDB*. Impacts to sensitive natural communities identified in local or regional plans, policies, regulations or by the CDFG or USFWS must be considered and evaluated under CEQA (California Code of Regulations: Title 14, Div. 6, Chap. 3, Appendix G). Specific habitats may also be identified as sensitive in City or County General Plans or ordinances.

METHODS

On December 18, 2008, the Project Area was traversed on foot to determine (1) plant communities present within the Project Area, (2) if existing conditions provided suitable habitat for any special status plant or wildlife species, and (3) if sensitive habitats are present.

Biological Communities

Biological communities present in the Project Area were classified based on existing plant community descriptions described in the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). However, in some cases it is necessary to identify variants of community types or to describe non-vegetated areas that are not described in the

literature. Biological communities were classified as sensitive or non-sensitive as defined by CEQA and other applicable laws and regulations.

Non-sensitive Biological Communities

Non-sensitive biological communities are those communities that are not afforded special protection under CEQA, and other state, federal, and local laws, regulations and ordinances. These communities may, however, provide suitable habitat for some special status plant or wildlife species.

Sensitive Biological Communities

Sensitive biological communities are defined as those communities that are given special protection under CEQA and other applicable federal, state, and local laws, regulations and ordinances. Special methods used to identify sensitive biological communities are discussed below.

Wetlands and Waters

The Project Area was surveyed to determine if any wetlands and waters potentially subject to jurisdiction by the Corps, RWQCB, or CDFG were present. The assessment was based primarily on the presence of wetland plant indicators, but may also include any observed indicators of wetland hydrology or wetland soils. Any potential wetland areas were identified as areas dominated by plant species with a wetland indicator status[1] of OBL, FACW, or FAC as given on the U.S. Fish and Wildlife Service List of Plant Species that Occur in Wetlands (Reed 1988). Evidence of wetland hydrology can include direct evidence (primary indicators), such as visible inundation or saturation, surface sediment deposits, algal mats and drift lines, or indirect indicators (secondary indicators), such as oxidized root channels. Some indicators of wetland soils include dark colored soils, soils with a sulfidic odor, and soils that contain redoximorphic features as defined by the Corps Manual (Environmental Laboratory, 1987) and Field Indicators of Hydric Soils in the United States (NRCS, 2002).

Other Sensitive Biological Communities

The Project Area was evaluated for the presence of other sensitive biological communities, including riparian areas, and sensitive plant communities recognized by CDFG.

Special Status Species

Literature Review

Potential occurrence of special status species in the Project Area was evaluated by first determining which special status species may occur in the Project Area through a literature and database search. Database searches for known occurrences of special status species focused on the Antioch North 7.5 minute USGS quadrangle and the eight surrounding USGS quadrangles. The following sources were reviewed to determine which special status plant and wildlife species have been documented to occur within 5 miles of the Project Area:

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[1] OBL = Obligate, always found in wetlands (> 99% frequency of occurrence); FACW = Facultative wetland, usually found in wetlands (67-99% frequency of occurrence); FAC = Facultative, equal occurrence in wetland or non-wetlands (34-66% frequency of occurrence).

- California Natural Diversity Database records (CNDDB) (CDFG 2008)
- CDFG publication "California's Wildlife, Volumes I-III" (Zeiner et al. 1990)
- CDFG publication "Amphibians and Reptile Species of Special Concern in California" (Jennings and Hayes 1994)
- CDFG Publication "California Bird Species of Special Concern" (Shuford and Gardali 2008)
- Fairy Shrimps of California's Puddles, Pools and Playas (Eriksen and Belk 1999)
- Shiloh II Wind Project Draft EIR, Solano County, October 2006

Site Assessment

A site visit was made to the Project Area to search for suitable habitats for species identified in the literature review as occurring within 5 miles of the Project Area. The potential for each special status species to occur in the Project Area was then evaluated according to the following criteria:

1) No Potential. Habitat on and adjacent to the Project Area is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

2) Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the Project Area is unsuitable or of very poor quality. The species is not likely to be found within the Project Area.

3) Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the Project Area is unsuitable. The species has a moderate probability of being found within the Project Area.

4) High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the Project Area is highly suitable. The species has a high probability of being found within the Project Area.

5) Present. Species is observed within the Project Area or has been recorded (i.e. CNDDB, other reports) in the Project Area recently.

The site assessment is intended to identify the presence or absence of suitable habitat for each special status species known to occur within 5 miles of the Project Area in order to determine its potential to occur in the Project Area. The field visit does not constitute a protocol-level survey and is not intended to determine the actual presence or absence of a species; however, if a special status species is observed during the field visit, its presence will be recorded and discussed. Appendix A presents the evaluation of potential for occurrence of each special status plant and wildlife species known to occur within 5 miles of the Project Area with their habitat requirements, potential for occurrence, and rationale for the classification based on criteria listed above. Recommendations for further surveys, if necessary, are provided at the end of this report for species with a moderate or high potential to occur in the Project Area.

RESULTS

The Project Area consists of an approximately 8-acre well pad located in the Montezuma Hills in southern Solano County. The well pad is located approximately 1.35 miles south of the intersection of Montezuma Hills Road and Bird's Landing Road. The pad is located on agricultural lands within a wind resource area. Surrounding land use is dominated by dry land agriculture and wind energy production. The following sections present the results and discussion of the biological assessment within the Project Area.

Biological Communities

Non-sensitive biological communities in the Project Area include agricultural land. No sensitive biological communities are found in the Project Area. Descriptions for each biological community are contained in the following sections.

Non-sensitive biological communities

Active agricultural land is not typically considered a biological community; however, several common and special status species may occasionally occur in agricultural fields to feed or find temporary shelter, depending upon crop type and season. The Project Area is disced at least annually following harvest of the barley, oat, or wheat crop, and interim grazing by sheep. The fall/winter discing creates poor habitat for burrowing mammals, and reduces cover for rodents and other raptor prey. The presence of wind turbines immediately adjacent to the proposed pad further reduces habitat suitability for raptors.

Sensitive Biological Communities

No sensitive biological communities are found in the Project Area.

Special Status Species

Plants

Based upon a review of the resources and databases discussed above, forty special status plant species have been documented or may occur within 5 miles of the Project Area. Due to unsuitable habitat and/or soils, and intensive agricultural activity, the Project Area has the potential to support none of these species. Appendix A summarizes the potential for occurrence for each special status plant species occurring in the Project Area. No special status plant species were observed in the Project Area during the assessment field visit.

Wildlife

Fifty-seven special status species of wildlife have been recorded or may occur within 5 miles of the Project Area. Appendix A summarizes the potential for each of these species to occur in the Project Area. No special status wildlife species were observed in the Project Area during the site assessment. One special status wildlife species (Loggerhead Shrike) has a high potential to occur in the Project Area, and two wintering special status bird species have a moderate potential to

occur in the Project Area. Special status wildlife species that were observed, or have a moderate or high potential to occur in the Project Area are discussed below.

Long-billed Curlew (*Numenius americanus*), USFWS Bird of Conservation Concern. Coastal estuaries, open grasslands, and croplands are used in winter while upland shortgrass prairies and wet meadows are used for nesting. Curlews are only expected to occur within or near the Project Area in winter. Due to extensive areas of available foraging habitat in the Central Valley region, development of a well pad will result in a less-than-significant impact to this species.

Loggerhead Shrike (*Lanias ludovicianus*), CDFG Species of Special Concern, USFWS Bird of Conservation Concern. The loggerhead shrike is a common resident and winter visitor in lowlands and foothills throughout California. It prefers open habitats with scattered trees, shrubs, posts, fences, utility lines or other perches. Nests are usually built on a stable branch in a densely-foliaged shrub or small tree and are usually well-concealed. The highest densities occur in open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian pinyon-juniper, juniper, and desert riparian habitats. While this species eats mostly Arthropods, they also take amphibians, small to medium-sized reptiles, small mammals and birds, and is also known to scavenge on carrion.

Shrikes potentially nest in willows associated with a drainage located approximately 0.4 mile southeast of the pad location. The proposed project will have a less-than-significant impact to the Loggerhead Shrike because of extensive areas of available foraging habitat in the Central Valley region, and the absence of suitable nesting habitat within and adjacent to the proposed pad.

Federal and State listed species that are documented to occur, or may occur within 5 miles of the Project Area, but are unlikely to occur include the California Tiger Salamander and Swainson's Hawk. These species are discussed below.

California Tiger Salamander (*Ambystoma californiense*), Federal Threatened, CDFG Species of Special Concern. The California tiger salamander is restricted to grasslands and low-elevation foothill regions in California (generally under 1500 feet) where it uses seasonal aquatic habitats for breeding. The salamanders breed in natural ephemeral pools, or ponds that mimic ephemeral pools (stock ponds that go dry), and occupy substantial areas surrounding the breeding pool as adults. California tiger salamanders spend most of their time in the grasslands surrounding breeding pools. They survive hot, dry summers by estivating (going through a dormant period) in refugia (such as burrows created by ground squirrels and other mammals and deep cracks or holes in the ground) where the soil atmosphere remains near the water saturation point. During wet periods, the salamanders may emerge from refugia and feed in the surrounding grasslands.

In 2007, a dead adult California Tiger Salamander (CTS) was observed approximately 2.6 miles north of the proposed pad location (CDFG 2008). Development of the proposed well pad will result in less-than-significant impacts to the species for the following reasons:

- The pad is located in intensively farmed areas. The location is disced annually, thereby discouraging burrowing mammal occupancy. Very few pocket gopher

burrows were observed at the pad site. No ground squirrel burrows were observed at the pad location. Salamanders are generally dependent on small mammal burrows for shelter during the dry season. The extremely low burrow density suggests that CTS are not present within the Project Area.

- CTS mitigation measures associated with the wind energy projects were based on the assumption of CTS presence. The measures included a 250-foot setback from any pond. For the well pad project, the proposed pad will be set back 3,300 from the nearest potential CTS breeding habitat. The proposed project will be well beyond the wind energy project setback distance.

- In one Solano County study (Trenham and Shaffer 2005), 95 percent of adult CTS were estimated to find burrows within 620 meters (2,100 feet) of a known breeding pond. The pad location is 3,300 feet from the nearest potential breeding habitat.

In summary, no significant impacts to CTS upland habitat will occur as a result of the proposed project. The pad location is largely devoid of available burrows, and well beyond the 250-foot breeding habitat setback required in the Shiloh II DEIR. The pad site is beyond the typical CTS dispersal distance from a potential breeding site.

Swainson's Hawk (*Buteo swainsoni*), State Threatened, USFWS Bird of Conservation Concern. Swainson's Hawk is an uncommon breeding resident and migrant in the Central Valley. In California's Central Valley Swainson's Hawks typically nest at edge of narrow bands of riparian vegetation, in isolated oak woodland, in lone trees, and in trees associated with roads, farmyards, as well as in adjacent urban residential areas. Where this species overlaps with Red-tailed Hawks, Swainson's will nest in smaller trees in smaller stands than do Red-tails (England et al. 1997).

Swainson's Hawks forage in open stands of grass-dominated vegetation, sparse shrublands, and small, open woodlands. In many parts of their range, hawks have adapted well to foraging in agricultural areas, such as row, grain, and hay crop agriculture. Prey are both numerous and conspicuous at and immediately following harvest. They are also attracted to alfalfa fields where flood irrigation is common and prey take refuge along field margins, and to burning fields, where prey are forced to evacuate (England et al. 1997).

The Project Area provides poor foraging habitat because it is primarily bare ground or stubble for most of the summer when the hawks are present. In addition, the presence of wind turbines in high densities adjacent to the proposed pad creates a collision hazard to foraging Swainson's Hawks.

According to the CDFG Natural Diversity Data Base (2008), there are no documented Swainson's Hawk nests within five miles of the proposed pad area. The combination of poor foraging habitat, hazardous foraging conditions, no known nests within five miles, and small impact area suggest that the potential project-related impact to Swainson's Hawk foraging habitat is less-than-significant.

SUMMARY AND RECOMMENDATIONS

No sensitive plant communities or special status plant species were observed or are likely to occur in the Project Area. Of the 57 special status wildlife species known to occur within 5 miles of the Project Area, 2 were determined to have the potential to occur in the Project Area. Most of the species found in the review of background literature occur in habitats not found in the Project Area. Habitat suitability for grassland-associated species in the Project Area is reduced due to regular discing of the site and adjacent wind energy production.

The potential presence of the California Tiger Salamander was considered unlikely due to the small size of the Project Area (approximately eight acres), very low burrow density due to regular discing, and distance between the proposed well pad and nearest potential breeding habitat. For these reasons, the proposed project will result in less-than-significant impacts to this species.

The potential presence of the Swainson's Hawk was considered low due to the small size of the Project Area (approximately eight acres), and poor foraging habitat due to regular discing and wind turbines. Since the Project Area is small, and contains marginal foraging value, the proposed project will result in less-than-significant impacts to this species.

Please let me know if you have any questions.

Sincerely,

Jeff Dreier
Senior Wildlife Ecologist

REFERENCES

California Department of Fish and Game. 2008. Natural Diversity Database, Wildlife and Habitat Data Analysis Branch. Sacramento.

California Department of Fish and Game. Environmental Services Division (ESD). 1994. A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607, California Fish and Game Code.

England, A. S., M. J. Bechard, and C. S. Houston. 1997. Swainson's Hawk (Buteo swainsoni). In The Birds of North America, No. 265 (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, D.C.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Department of the Army, Waterways Experiment Station, Vicksburg, Mississippi 39180-0631.

Erikson, C.H. and D. Belk. 1999. Fairy Shrimps of California's Puddles, Ponds and Playas. Mad River Press, Inc., Eureka, California.

Holland, R. F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Prepared for the California Department of Fish and Game, Sacramento, California

Jennings, M. R. and M. P. Hayes. 1994. Amphibian and reptile species of special concern in California. Final report submitted to the California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, California. Contract No. 8023.

Natural Resources Conservation Service (NRCS). 2002. Field Indicators of Hydric Soils in the United States, version 5.0. G.W. Hurt, P.M. Whited, eds. USDA, NRCS in cooperation with the National Technical Committee for Hydric Soils, Fort Worth, TX.

Shuford, W.D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornnithologisats, Camarillo, California, and California Department of Fish and Game, Sacramento.

Trenham P.C. and H.B. Shaffer. 2005. Amphibian Upland Habitat Use and Its Consequences for Population Viability. Ecological Applications, 15(4), 1158-1168.

U.S. Army Corps of Engineers (Corps). 2006. Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. December.

U.S. Army Corps of Engineers and the Environmental Protection Agency. 2007. U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook.

Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer, and M. White. 1990. California's Wildlife, Volume I-III: Amphibians and Reptiles, Birds, Mammals. California Statewide Wildlife Habitat Relationships System, California Department of Fish and Game, Sacramento.

ATTACHMENT A

POTENTIAL FOR SPECIAL STATUS PLANT AND WILDLIFE SPECIES TO OCCUR IN THE PROJECT AREA

Attachment A (Plants). This list was compiled from a search of the USGS Honker Bay, Antioch South, Clayton, Vine Hill, Fairfield South, Walnut Creek, Antioch North, Birds Landing, and Denverton USGS 7.5 minute quadrangles of the California Department of Fish and Game (CDFG) Natural Diversity Data Base (NDDB) (2008) and the CNPS Electronic Inventory (2008).

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS FOR FURTHER ACTION
Amsinckia grandiflora large-flowered fiddleneck	FE, SE, List 1B	Cismontane woodland, valley and foothill grassland. 275-305 m.. Blooms April-May	**Not present.** Solano County is outside the range of this species.	No further action necessary.
Amsinckia lunaris bent-flowered fiddleneck	List 1B	Cismontane woodland, valley and foothill grassland. 50-500m. Blooms March-June.	**Not present.** Solano County is outside the range of this species.	No further action necessary.
Aster lentus Suisun Marsh aster	List 1B	Marshes and swamps (brackish and freshwater). Endemic to the Sac/San Joaquin river delta. Most often seen along sloughs with *Phragmites*, *Scirpus*, blackberry, *Typha*, etc. 0-3m. Blooms May-November.	**Not Present.** No marsh or swamp habitats are present in the Project Area.	No further action necessary.
Astragalus tener var. *tener* alkali milk vetch	List 1B	Alkali playa, valley and foothill grassland (adobe clay), vernal pools, low ground, alkali flats and flooded lands. 1-170 m. Blooms March-June.	**Not Present.** Low alkali soils, wetlands and vernal pools are not present. Grassland ridgetops do not provide suitable habitat for this species.	No further action necessary.
Atriplex cordulata heartscale	List 1B	Chenopod scrub, valley and foothill grassland (sandy), meadows (alkaline clay), alkaline flats and scalds in the Central Valley. 1-375 m. Blooms April-October.	**Not Present.** Chenopod scrub and low alkali lands are not present. Grassland ridgetops do not provide suitable habitat for this species.	No further action necessary.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS FOR FURTHER ACTION
Atriplex depressa brittlescale	List 1B	Chenopod scrub, meadows, playas, valley and foothill grasslands, vernal pools. Usually in alkali scalds or alk. clay in meadows or annual grassland; rarely associated w/ riparian marshes or vernal pools. 1-320 m. Blooms May-October	**Not Present.** Low alkali lands, vernal pools and meadows are not present. Grassland ridgetops do not provide suitable habitat for this species.	No further action necessary.
Atriplex joaquiniana San Joaquin saltbrush	List 1B	Chenopod scrub, alkali meadow, valley and foothill grassland. In seasonal alkali wetlands or alkali sink scrub with *Distichlis*, *Frankenia*, etc. 1-320 m. Blooms April-October.	**Not present**. Low alkali lands and wetlands are not present. Grassland ridgetops do not provide suitable habitat for this species.	No further action necessary.
Blepharizonia plumosa ssp. *plumosa* big tarplant	List 1B	Valley and foothill grassland, usually on slopes (dry hills) and often in burned areas. Clay to clay-loam soil. 15-505 m. Blooms July-October	**Unlikely.** Typical north facing slope habitat of this species not present in the Project Area. Unlikely to persist under long term agricultural disturbance.	No further action necessary.
Calochortus pulchellus Mt. Diablo fairy lantern	List 1B	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. 30-840 m. April-June	**Not present**. Woody habitats are not present. Disturbed grassland does not provide suitable habitat.	No further action necessary.
Cirsium hydrophilum var. *hydrophilum* Suisun thistle	FE, List 1B	Endemic to the Sacramento/San Joaquin Delta; known only from Solano county. Grows with *Scirpus* and *Distichlis* near small watercourses within salt marsh habitat. 0-1m. Blooms July-September.	**Not present.** Salt marsh habitat is not present.	No further action necessary.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS FOR FURTHER ACTION
Cordylanthus mollis ssp. *hispidus* Hispid bird's-beak	List 1B	Meadows and seeps, playas, valley and foothill grasslands, and wetlands; damp alkaline soils. 1-155m. Blooms June-September	**Not Present.** Wetland habitat is not present in the Project Area.	No further action necessary.
Cordylanthus mollis ssp. *mollis* soft bird's-beak	List 1B	In coastal salt marsh with *Distichlis*, *Salicornia*, *Frankenia*, etc. 0-3m. Blooms July-November.	**Not present.** Coastal marsh is not present in the Project Area.	No further action necessary.
Cryptantha hooveri Hoover's cryptantha	List 1B	Valley and foothill grassland (sandy); elevation 3-150 m. Blooms April-May.	**Not Present.** Not known to occur north of the Carquinez Strait. Sandy soils are not present.	No further action necessary.
Downingia pusilla dwarf downingia	List 2	Valley and foothill grassland (mesic sites), vernal pools. Vernal lake and pool margins with a variety of associate species. In several types of vernal pools. 1-445m. Blooms March-May.	**Not present.** Vernal pool habitat is not present.	No further action necessary.
Erodium macrophyllum round-leaved filaree	List 2	Open sites, dry grasslands, shrublands. 15-1200 m. Blooms March-May.	**Unlikely.** Shrublands are not present. Unlikely to persist under long term agricultural disturbance.	No further action necessary.
Erysimum capitatum ssp. *angustatum* Contra Costa wallflower	FE, SE, List 1B	Inland dunes. Endemic to Contra Costa county. Stabilized dunes of sand and clay near Antioch along the San Joaquin River. 3-20m. Blooms March-July.	**Not present.** Dune habitat is not present. Project Area is above typical elevation range of species.	No further action necessary.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS FOR FURTHER ACTION
Eschscholzia rhombitpetala diamond-petaled California poppy	List 1B	Valley and foothill grassland. Most sites are historical. Alkaline, clay slopes and flats. 0-975 m. Blooms March-April.	**Not Present.** Solano County is outside the range for this species. Disturbed grassland does not provide suitable habitat.	No further action necessary.
Fritillaria liliacea Fragrant fritillary	List 1B	Coastal scrub, valley and foothill grassland, coastal prairie. Often in serpentine; various soils reported though usually clay, in grassland. 3-410 m. Blooms February-April	**Not present.** Coastal scrub, coastal prairie and serpentine soils are not present in the Project Area. Disturbed grassland does not provide suitable habitat.	No further action necessary.
Helianthella castanea Diablo helianthella	List 1B	Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Usually in chaparral/oak woodland interface in rocky, azonal soils. 25-1300 m. Blooms April-June.	**Not present.** Woody habitats are not present. Disturbed grassland does not provide suitable habitat.	No further action necessary.
Hemizonia parryi ssp. *congdonii* Congdon's tarplant	List 1B	Valley and foothill grassland on alkaline soils. 1-230 m. Blooms June-November.	**Not present.** Flat, low-lying areas that typically support this species are not present. Unlikely to persist under long term agricultural disturbance.	No further action necessary.
Hemizonia parryi ssp. *parryi* pappose tarplant	List 1B	Coastal prairie, meadows and seeps, coastal salt marsh, valley and foothill grassland. Vernally mesic, often alkaline sites. 2-420m. Blooms May-November.	**Not present.** Coastal prairie, meadows and seeps and coastal salt marsh habitats are not present in the Project Area.	No further action necessary.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS FOR FURTHER ACTION
Hesperolinon breweri Brewer's western flax	List 1B	Chaparral, cismontane woodland, valley and foothill grassland / mostly serpentine. 30-900 m. May-July	**Not present.** Chaparral, woodland, and serpentine grassland are not present in the Project Area.	No further action necessary.
Isocoma arguta Carquinez goldenbush	List 1B	Valley and foothill grassland (alkaline). Known only from Contra Costa, and Solano counties. Alkaline soils, flats, lower hills. On low benches near drainages & on tops & sides of mounds in swale habitat. 1-20m. Blooms August-December.	**Not present.** Flat alkaline areas and benches not present. Disturbed grassland does not provide suitable habitat.	No further action necessary.
Lasthenia conjugens Contra Costa goldfields	FE, List 1B	Valley and foothill grassland, vernal pools, swales, low depressions, open grassy areas, mesic areas in cismontane woodland. 0-470 m. Blooms March-June	**Not present.** Low, flat habitats, vernal pools and swales are not present. Disturbed grassland does not provide suitable habitat.	No further action necessary.
Lathyrus jepsonii var. *jepsonii* Delta tule pea	List 1B	Freshwater and brackish marshes. Most of distribution restricted to the Sacramento/San Joaquin river delta. Often found w/Typha, *Aster lentus*, *Rosa calif.*, *Juncus* spp., *Scirpus*, etc. Usually on marsh and slough edges. Blooms May-September.	**Not present.** Marsh habitat is not present in the Project Area.	No further action necessary.
Legenere limosa legenere	List 1B	Vernal pools. Many historical occurrences are extirpated. 1-880m. Blooms April-June.	**Not present.** Vernal pool habitat is not present in the Project Area.	No further action necessary.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS FOR FURTHER ACTION
Lessingia hololeuca wooly-headed lessingia	List 3	Coastal scrub, lower montane coniferous forest, valley and foothill grassland. Clay, serpentine; roadsides, fields. 15-300m. Blooms June-October.	**Not present.** Woody habitats and serpentine soils are not present. Disturbed grassland does not provide suitable habitat.	No further action necessary.
Lilaeopsis masonii Mason's lilaeopsis	SR, List 1B	Freshwater and brackish marshes, riparian scrub. Tidal zones, in muddy or silty soil formed through river deposition or river bank erosion. 0-10m. Blooms April-November.	**Not present.** Marsh and riparian habitats are not present. Known to occur 3 miles west of Project Area (CDFG 2008).	No further action necessary.
Limosella subulata Delta mudwort	List 2	Riparian scrub, freshwater marsh, brackish marsh. Probably the rarest of the suite of delta rare plants. Usually on mud banks of the delta in marshy or scrubby riparian associations; often with *Lilaeopsis masonii.* 0-3m. Blooms May-August.	**Not present.** Riparian and marsh habitat are not present. Known to occur 3 miles south of Project Area (CDFG 2008).	No further action necessary.
Madia radiata showy madia	List 1B	Valley and foothill grassland, cismontane woodland, chenopod scrub. Mostly on adobe clay in grassland or among shrubs. 25-1125m. Blooms March-May.	**Not present.** Woody habitats and chenopod scrub are not present. This species is not known to occur in Solano County.	No further action necessary.
Micropus amphibolus Mt. Diablo cottonweed	List 3	Broadleaved upland forest, chaparral, cismontane woodland, valley and foothill grassland/rocky. 45-825 m. Blooms March-May.	**Not present.** Woody habitats and rocky soils are not present in the Project Area.	No further action necessary.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS FOR FURTHER ACTION
Monardella villosa ssp. *globosa* robust monardella	List 1B	Broadleaved upland forest, chaparral, cismontane woodland, valley and foothill grassland. Openings. 30-300m. Blooms June-July.	**Not present.** Woody habitats are not present in the Project Area. Disturbed grassland does not provide suitable habitat.	No further action necessary.
Neostapfia colusana Colusa grass	FE, SE List 1B	Vernal pools (adobe); 5-200 m. Blooms May-August.	**Not present.** Vernal pools are not present in the Project Area.	No further action necessary.
Oenothera deltoides ssp. *howellii* Antioch dunes evening primrose	FE, SE, List 1B	Interior dunes. Known only from Contra Costa and Sacramento Counties. Remnant river bluffs and sand dunes east of Antioch. 0-30M. Blooms March-September.	**Not present.** Dunes are not present in the Project Area.	No further action necessary.
Plagiobothrys hystriculus bearded popcorn flower	List 1A	Vernal pools, valley and foothill grassland. Known only from a historical collection in Solano County. Wet sites. 10-50m. Blooms April-May.	**Not present.** Vernal pools are not present in the Project Area. CDFG (2008) has mapped an occurrence 3.5 miles north of Project Area.	No further action necessary.
Sanicula saxatilis rock sanicle	List 1B	Broadleaved upland forest, chaparral, valley and foothill grassland / rocky. 620-1175 m. April-May	**Not present.** Woody habitats and rocky soils are not present in the Project Area.	No further action necessary.
Streptanthus albidus ssp. *peramoenus* most beautiful jewel-flower	List 1B	Chaparral, valley and foothill grassland, cismontane woodland. Serpentine outcrops, on ridges and slopes. 120-730m. Blooms April-June.	**Not present.** Serpentine outcrops are not present in the Project Area.	No further action necessary.
Streptanthus hispidus Mt. Diablo jewelflower	List 1B	Chaparral, valley and foothill grassland/rocky. 365-1200m. March-June	**Not present.** Chaparral and rocky soils are not present in the Project Area.	No further action necessary.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS FOR FURTHER ACTION
Trifolium depauperatum var. *hydrophilum* saline clover	List 1B	Marshes and swamps, valley and foothill grassland, vernal pools. Mesic, alkaline sites. 0-300m. Blooms April-June.	**Not present.** Marshes, swamps and vernal pools are not present in the Project Area.	No further action necessary.
Tropidocarpum capparideum caper-fruited tropidocarpum	List 1A	Valley and foothill grassland on alkaline hills. 0-455 m. Blooms March-April.	**Not present.** Solano County is outside the range for this species.	No further action necessary.

***Key to status codes:**

FE Federal Endangered
FT Federal Threatened
FSC Federal Species of Concern
SE State Endangered
SR State Rare
List 1A California Native Plant Society (CNPS) list of plants presumed extinct in California
List 1B CNPS list of plants rare, threatened, or endangered in California and elsewhere
List 2 CNPS list of plants rare, threatened, or endangered in California, but more common elsewhere
List 3 CNPS List 3: Plants about which more information is needed.

Attachment A (Wildlife). Special status animal species that may occur, or are known to occur within five miles of the proposed 8-acre well pad location (Project Area). List compiled from USFWS Species lists (USFWS 2008), and CNDDB Solano County lists (2008).

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS FOR FURTHER ACTION
Mammals				
Suisun ornate shrew *Sorex ornatus sinuosus*	SSC	Requires dense low-lying cover and driftweed and other litter above the mean hightide line for breeding and foraging.	**Not Present.** Typical wetland habitat not present in Project Area.	No further action necessary.
Townsend's western big-eared bat *Corynorhinus townsendii townsendii*	SSC, WBWG high priority	Primarily found in rural settings in a wide variety of habitats including oak woodlands and mixed coniferous-deciduous forest. Day roosts highly associated with caves and mines. Very sensitive to human disturbance.	**Not Present.** Bat roost habitat is not present within the Project Area.	No further action necessary.
small-footed myotis *Myotis ciliolabrum*	WBWG medium priority	Commonly found in arid uplands of California. Feeds on a variety of small flying insects. Seeks cover in caves, buildings, mines, crevices, and occasionally under bridges.	**Not Present.** Bat roost habitat is not present within the Project Area.	No further action necessary.
long-eared myotis *Myotis evotis*	WBWG medium priority	Primarily a forest associated species. Day roosts in hollow trees, under exfoliating bark, rock outcrop crevices and buildings. Other roosts include caves, mines and under bridges.	**Not Present.** Bat roost habitat is not present within the Project Area.	No further action necessary.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS FOR FURTHER ACTION
fringed myotis *Myotis thysanodes*	WBWG high priority	Associated with a wide variety of habitats including mixed coniferous-deciduous forest and redwood/sequoia groves. Buildings, mines and large snags are important day and night roosts.	**Not Present.** Bat roost habitat is not present within the Project Area.	No further action necessary.
long-legged myotis *Myotis volans*	WBWG	Generally associated with woodlands and forested habitats. Large hollow trees, rock crevices and buildings are important day roosts. Other roosts include caves, mines and buildings.	**Not Present.** Bat roost habitat is not present within the Project Area.	No further action necessary.
Yuma myotis *Myotis yumanensis*	WBWG low priority	Known for its ability to survive in urbanized environments. Also found in heavily forested settings. Day roosts in buildings, trees, mines, caves, bridges and rock crevices. Night roosts associated with man-made structures.	**Not Present.** Bat roost habitat is not present within the Project Area.	No further action necessary.
greater western mastiff bat *Eumops perotis californicus*	SSC, WBWG high priority	Found in a wide variety of habitat. Distribution appears to be tied to large rock structures which provide suitable roosting sites, including cliff crevices and cracks in boulders.	**Not Present.** Bat roost habitat is not present within the Project Area.	No further action necessary.
salt-marsh harvest mouse *Reithrodontomys raviventris*	FE, SE	Primary habitat in pickleweed-dominated saline emergent marshes of San Francisco Bay. Require adjacent upland areas for escape from high tides.	**Not Present.** Tidal and diked saline wetlands are not present within or adjacent to the Project Area.	No further action necessary.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS FOR FURTHER ACTION
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	SSC	Occurs in forest habitats of moderate canopy and moderate to dense understory. Also found in chaparral habitats. Feeds mainly on woody plants: live oak, maple, coffeeberry, alder, and elderberry	**Not Present.** Scrub and woodland habitats are not present within the Project Area.	No further action necessary.
American badger *Taxidea taxus*	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	**Unlikely.** Frequent discing generally precludes prey species; may occasionally disperse through Project Area.	No further action necessary.
Birds				
Common Loon *Gavia immer*	SSC	Winter in estuarine and subtidal marine habitats along coast, San Francisco Bay.	**Not Present.** Open water habitat is not present in the Project Area.	No further action necessary.
American White Pelican *Pelecanus eruthrorhynchos*	SSC	Colonial nester on large interior lakes. Nests on large lakes, providing safe roosting and breeding places in the form of well-sequestered islets.	**Not Present.** Open water habitat is not present in the Project Area.	No further action necessary.
Greater Sandhill Crane *Grus canadensis tabida*	ST	Nests in wetland habitats in northeastern California; winters in the Central Valley. Prefer grain fields within 4 miles of a shallow body of water used as a communal roost site; irrigated pasture used as loaf sites.	**Not Present.** Wintering cranes prefer flat areas in the Central Valley.	No further action necessary.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS FOR FURTHER ACTION
Golden Eagle *Aquila chrysaetos*	CFP, BCC	Found in rolling foothill and mountain areas, sage-juniper flats, dessert. Cliff-walled canyons provide nesting habitat in most parts of range.	**Unlikely.** No nesting habitat present. May occasionally fly over the Project Area, but nearby wind turbines probably discourage most foraging, and regular discing of the Project Area generally precludes prey species.	No further action necessary.
Ferruginous Hawk *Buteo regalis*	BCC	Frequents open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys and fringes of pinyon-juniper habitats.	**Unlikely.** Winter visitor and migrant. May occasionally fly over the Project Area, but nearby wind turbines probably discourage most foraging, and regular discing of the Project Area generally precludes prey species.	No further action necessary.
Swainson's Hawk *Buteo swainsoni*	ST, BCC	Breeds in stands with few trees in juniper-sage flats, riparian areas and oak savannah. Requires adjacent suitable foraging areas such as grasslands or grain fields supporting rodent populations.	**Unlikely.** No nesting habitat present. May occasionally fly over the Project Area, but nearby wind turbines probably discourage most foraging, and regular discing of the Project Area generally precludes prey species.	No further action necessary.
Northern Harrier *Circus cyaneus*	SSC	Nests and forages in grassland habitats, usually in association with coastal salt and freshwater marshes. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas. May also occur in alkali desert sinks.	**Unlikely.** No nesting habitat present. May occasionally forage in wetland areas and non-disced areas south of the Project Area. Regular discing of the Project Area generally precludes prey species.	No further action necessary.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS FOR FURTHER ACTION
White-tailed Kite *Elanus leucurus*	CFP	Year-long resident of coastal and valley lowlands; rarely found away from agricultural areas. Preys on small diurnal mammals and occasional birds, insects, reptiles, and amphibians.	**Unlikely.** No nesting habitat present. May occasionally fly over the Project Area, but nearby wind turbines probably discourage most foraging, and regular discing of the Project Area generally precludes prey species.	No further action necessary.
Bald Eagle *Haliaeetus leucocephalus*	SE, CFP	Requires large bodies of water, or free-flowing rivers with abundant fish adjacent snags or other perches. Nests in large, old-growth, or dominant live tree with open branchwork.	**Not Present.** Nesting and foraging habitat are not present in the Project Area.	No further action necessary.
American Peregrine Falcon *Falco peregrinus anatum*	SE, CFP, BCC	Winters throughout Central Valley. Requires protected cliffs and ledges for cover. Feeds on a variety of birds, and some mammals, insects, and fish.	**Unlikely.** No nesting habitat present. No aggregations of prey species in or near the Project Area.	No further action necessary.
Black Rail *Laterallus jamaicensis coturniculus*	ST, CFP, BCC	Rarely seen resident of saline, brackish, and fresh emergent wetlands in the San Francisco Bay area. Nest in dense stands of pickleweed	**Not Present.** Tidal emergent wetlands are not present within the Project Area.	No further action necessary.
California Clapper Rail *Rallus longirostris obsoletus*	FE, SE, CFP	Found in tidal salt marshes of the San Francisco Bay. Require mudlfats for foraging and dense vegetation on higher ground for nesting.	**Not Present.** Tidal emergent wetlands are not present within the Project Area.	No further action necessary.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS FOR FURTHER ACTION
Mountain Plover *Charadruis montanus*	SSC, BCC	Winter resident in short grasslands and plowed fields below 1000m.	**Unlikely.** According to Shuford and Gardali (2008), this species is not a regular visitor to the Montezuma Hills area. No documented occurrences within 5 miles (CDFG 2008).	No further action necessary.
Long-billed Curlew *Numenius americanus*	BCC	Winters in large coastal estuaries, upland herbaceous areas, and croplands. Breeds in northeastern California in wet meadow habitat.	**Moderate Potential.** Disced agricultural lands and post-harvest stubble provide suitable winter habitat.	Wintering species. No further action necessary.
California Least Tern *Sterna antillarum browni*	FE, SE, CFP	Nests along the coast from San Francisco Bay south to northern Baja California. Breeding colonies in San Francisco Bay found in abandoned salt ponds and along estuarine shores. Colonial breeder on barren or sparsely vegetated, flat substrates near water.	**Not Present.** No open water habitat present in Project Area; no suitable nesting substrate present.	No further action necessary.
Caspian Tern *Sterna caspia*	BCC	Nests in small colonies inland and along the coast at fresh-water lakes and marshes.	**Not Present.** No open water habitat present in Project Area; no suitable nesting substrate present.	No further action necessary.
Western Yellow-billed Cuckoo *Coccyzus americanus occidentalis*	FC, SE	Found in deep forest riparian areas.	**Not Present.** Dense riparian woodland is not present within or adjacent to the Project Area.	No further action necessary.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS FOR FURTHER ACTION
Western Burrowing Owl *Athene cunicularia hypugea*	SSC, BCC	Frequents open grasslands and shrublands with perches and burrows. Preys upon insects, small mammals, reptiles, birds, and carrion. Nests and roosts in old burrows of small mammals.	**Unlikely.** Suitable burrow habitat not observed in Project Area. Nearest documented occurrence is 3 miles southwest (CDFG 2008).	No further action necessary.
Short-eared Owl *Asio flammeus*	SSC	Found in open, treeless areas with elevated sites for perches and dense vegetation for roosting and nesting.	**Unlikely.** No nesting habitat present. May occasionally fly over the Project Area, but nearby wind turbines probably discourage most foraging, and regular discing of the Project Area generally precludes prey species. Documented to occur approximately 3 miles west of the Project Area (CDFG 2008).	No further action necessary.
Vaux's Swift *Chaetura vauxi*	SSC	Forages high in the air over most terrain and habitats but prefers rivers/lakes. Requires large hollow trees for nesting.	**Unlikely.** No nesting habitat in Project Area.	No further action necessary.
Rufous Hummingbird *Selasphorus rufus*	BCC	Found in a wide variety of habitats that provide nectar-producing flowers. A common migrant and uncommon summer resident of California.	**Not Present.** Typically occurs in Coast Range during northward migration. Nectar sources not present in Project Area.	No further action necessary.
Olive-sided Flycatcher *Contopus cooperi*	SSC, BCC	Most often found in montane conifer forests where tall trees overlook canyons, meadows, lakes or other open terrain	**Not Present.** Typical woodland/forest habitat not present in Project Area.	No further action necessary.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS FOR FURTHER ACTION
Little Willow Flycatcher *Empidonax traillii brewsteri*	SE	Most numerous where extensive thickets of low, dense willows edge on wet meadows, ponds, or backwaters. Winter migrant.	**Not Present.** No nesting habitat. Nocturnal migrant probably does not use Project Area during stop-overs.	No further action necessary.
Bank Swallow *Riparia riparia*	ST	Migrant in riparian and other lowland habitats in western California. Nests in riparian areas with vertical cliffs and bands with fine-textured or sandy soils in which to nest.	**Unlikely.** No nesting habitat in Project Area.	No further action necessary.
Loggerhead Shrike *Lanius ludovicianus*	SSC, BCC	Prefers open habitats with scattered shrubs, trees, pots, utility lines from which to forage for large insects. Nest well concealed above ground in densely-foliaged shrub or tree.	**High Potential.** Observed along Montezuma Hills Road north of Project Area. May forage in Project Area, but nearest breeding habitat is located 0.4 mile southeast of northern pad, and 0.1 mile east of southern pad.	Foraging habitat only. No further action necessary.
Saltmarsh Common Yellowthroat *Geothlypis trichas sinuosa*	SSC	Frequents low, dense vegetation near water including fresh to saline emergent wetlands. Brushy habitats used in migration. Forages among wetland herbs and shrubs for insects primarily.	**Unlikely**. Documented to occur 5 miles south of Project Area (CDFG 2008). Nearest suitable habitat is 0.4 mile southeast of proposed pad.	No further action necessary.
Yellow-breasted Chat *Icteria virens*	SSC, BCC	Nests in low, dense riparian thickets consisting of willow, blackberry, and wild grape.	**Not Present.** Dense riparian woodland is not present within or adjacent to the Project Area.	No further action necessary.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS FOR FURTHER ACTION
Grasshopper Sparrow *Ammodramus savannarum*	SSC	Frequents dense tall, dry or well-drained grasslands, especially native grasslands with mixed grasses and forbs for foraging and nesting. Nests on ground at base of overhanging clumps of vegetation.	**Unlikely.** Disced agricultural lands and activity associated with spring harvest preclude presence.	No further action necessary.
Bell's Sage Sparrow *Amphispiza belli*	BCC	Prefers dense chaparral and scrub habitats in breeding season. Found in more open habitats in winter.	**Not Present.** Scrub habitats not present within Project Area.	No further action necessary.
Suisun Song Sparrow *Melospiza melodia maxillaris*	SSC, BCC	Resident of brackish-water marshes surrounding Suisun Bay. Inhabits cattails, tules and other sedges, and *Salicornia*; also known to frequent tangles bordering sloughs.	**Not Present.** Tidal habitat not present. Documented to occur 5 miles southwest of Project Area (CDFG 2008).	No further action necessary.
Bryant's Savannah Sparrow *Passerculus sandwichensis alaudinus*	SSC	Low tidally influenced habitats (especially Pickleweed and Saltgrass marsh), adjacent ruderal areas, moist grasslands just above the fog belt, and, infrequently, drier grasslands. Nests in dense cover on the ground or slightly above in supporting grass or Pickleweed.	**Unlikely.** Disced agricultural lands and activity associated with spring harvest preclude presence.	No further action necessary.
Tricolored Blackbird *Agelaius tricolor*	SSC, BCC	Usually nests over or near freshwater in dense cattails, tules, or thickets of willow, blackberry, wild rose or other tall herbs.	**Unlikely.** May occasionally forage in agricultural fields, but breeding habitat is not present. Documented 3 miles west of Project Area (CDFG 2003).	No further action necessary.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS FOR FURTHER ACTION
Lawrence's Goldfinch *Carduelis lawrencei*	BCC	Inhabits oak woodlands, chaparral, riparian woodlands, pinyon-juniper associations, and weedy areas near water during the breeding season.	**Unlikely.** Project Area contains little or no vegetation for most of year.	No further action necessary.
Reptiles and Amphibians				
western pond turtle *Clemmys marmorata*	SSC	Occurs in perennial ponds, lakes, rivers and streams with suitable basking habitat (mud banks, mats of floating vegetation, partially submerged logs) and submerged shelter.	**Not Present.** No aquatic habitat within or adjacent to Project Area. Nearest known occurrence is 3.5 miles south of Project Area.	No further action necessary.
California horned lizard *Phrynosoma coronatum frontale*	SSC	Occurs in valley-foothill hardwood, conifer and riparian habitats, as well as in pine-cypress juniper and annual grass habitats. Prefers sand areas, washes, flood plains and wind-blown deposits.	**Not Present.** No documented occurrences in southern Solano County (Jennings and Hayes 1994). Agricultural activity precludes presence.	No further action necessary.
silvery legless lizard *Anniella pulchra pulchra*	SSC	Found in sandy or loose loamy soils under sparse vegetation. Soil moisture is essential.	**Not Present.** No documented occurrences in southern Solano County (Jennings and Hayes 1994). Agricultural activity precludes presence.	No further action necessary.
giant garter snake Thamnophis gigas	FT, ST	Prefers freshwater marsh and low gradient streams. Has adapted to drainage channels and irrigation ditches.	**Not Present.** Suitable aquatic habitat is not present within or adjacent to the Project Area.	No further action necessary.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS FOR FURTHER ACTION
California tiger salamander *Ambystoma californiense*	FT, SSC	Inhabits annual grass habitat and mammal burrows. Seasonal ponds and vernal pools crucial to breeding	**Unlikely.** Documented to occur 2.5 miles north of pad location (CDFG 2008). Nearest potential breeding habitat is 3,300 feet southeast of the proposed pad. Discing and other agricultural activity reduce burrow availability.	No further action necessary.
western spadefoot toad *Scaphiopus (Spea) hammondii*	SSC	Occurs primarily in grasslands but occasionally populates valley-foothill hardwood woodlands. Feed on insects, worms, and other invertebrates.	**Not Present.** No documented occurrences in southern Solano County (Jennings and Hayes 1994). Agricultural activity precludes presence.	No further action necessary.
California red-legged frog *Rana aurora draytonii*	FT, SSC	Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation. Documented to disperse through upland habitats after rains.	**Not Present.** Suitable aquatic habitat is not present within or adjacent to the Project Area.	No further action necessary.
Invertebrates				
Conservancy fairy shrimp *Branchinecta conservatio*	FE	Inhabit highly turbid water in vernal pools. Known from six populations in the northern central valley.	**Not Present.** Vernal pool and swale habitats are not present in or adjacent to the proposed pad.	No further action necessary.
vernal pool fairy shrimp *Branchinecta lynchi*	FT	Inhabit small, clear-water sandstone-depression pools, grassy swales, slumps, or basalt-flow depression pools.	**Not Present.** Vernal pool and swale habitats are not present in or adjacent to the proposed pad.	No further action necessary.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS FOR FURTHER ACTION
vernal pool tadpole shrimp *Lepidurus packardi*	FE	Pools commonly found in grass bottomed swales of unplowed grasslands. Som pools are mud-bottomed and highly turbid.	**Not Present.** Vernal pool and swale habitats are not present in or adjacent to the proposed pad.	No further action necessary.
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT	Occurs in mature elderberry bushes in the Central Valley. Prefers to lay eggs in branches 2-8 inches in diameter.	**Not Present.** Elderberrry shrubs are not present in or adjacent to the Project Area.	No further action necessary.
Delta green ground beetle *Elaphrus viridis*	FT	Restricted to the margins of vernal pools in the grassland area between Jepson Prairie and Travis AFB. Prefers sandy mud substrate where it slopes gently into water with low-growing vegetation.	**Not Present.** Vernal pool and swale habitats are not present in or adjacent to the proposed pad.	No further action necessary.
Callippe silverspot butterfly *Speyeria callippe callippe*	FE	Restricted to northern coastal scrub of the San Francisco peninsula. Hostplant is *Viola pedunculata.*	**Not Present.** Host plant has likely been eliminated by agricultural activity from Project Area.	No further action necessary.

*** Key to status codes:**
Status codes used above are:
BCC - Fish and Wildlife Service: Birds of Conservation Concern
CFP - CDFG Fully Protected Animal
FE - Federal Endangered
FT - Federal Threatened
FC - Federal Candidate
SE - State Endangered
ST - State Threatened
SSC - CDFG Species of Special Concern
WBWG - Western Bat Working Group

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

June 23, 2010

Mr. Milford Wayne Donaldson
State Historic Preservation Officer
Attention: Tristan Tozer
1416 9th Street, Room 1442
Sacramento, CA 95314

Re: National Historic Preservation Act (NHPA), Section 106 Review for Proposed Underground Injection Control Permit

Dear Mr. Donaldson:

The United States Environmental Protection Agency, Region 9 (EPA) is processing an Underground Injection Control permit application for C6 Resources, an affiliate of Shell Oil Company. The permit would authorize the drilling and construction of one injection well and one monitoring well approximately two miles beneath the ground surface for the purpose of sequestering carbon dioxide (CO_2) as part of an experimental program funded in part by the U.S. Department of Energy. This is a research project to investigate the geologic formation and the behavior of CO_2 in the formation. The only surface disturbance from the project will be construction of a drill pad and penetration of the ground with the two wells. The site is used for dry land farming (wheat and grazing) and is in a wind energy farm. The site is plowed every year or two by the landowner. The site is relatively flat and on a ridge, and is not near any structures or water bodies. The site is located near Birds Landing, Solano County, CA. A map of the project area is included in the attachments.

Under Section 106 of NHPA, EPA is required to (1) take into account the effects of a potentially permitted activity on cultural resources, and (2) make a determination as to whether or not the potential permitted activity will cause effects to cultural resources. Attached is a cultural resources report prepared by C6 for this project.

Section 106 Determination

EPA has reviewed the attached report and evaluated the site and vicinity with regard to potential impacts on cultural resources and based on these considerations, and as required by Section 106 of NHPA, EPA has been determined that no impacts to cultural resources are expected.

We are requesting your evaluation of and concurrence with, our determination. We would like to issue the Underground Injection Control permit to C6 Resources as soon as

possible. Thus, any expediting of your Office's consideration of this matter would be greatly appreciated.

If you have any questions, please call me at (415) 972-3971 or Michele Dermer of my staff at (415) 972-3417.

Sincerely,

David Albright
Manager, Ground Water Office

Enclosure

ENCLOSURE

September 1, 2009

B. Fritts Golden, AICP
Aspen Environmental Group
235 Montgomery Street, Suite 935
San Francisco, CA 94104

RE: Archaeological Survey and Assessment of C6 Resources LLC's Proposed Northern California CO2 Reduction Project, Solano County, California

Dear Mr. Golden:

In accordance with our agreement, William Self Associates, Inc. (WSA) has implemented a record search, archaeological field survey and assessment of C6 Resources LLC's proposed Northern California CO2 Reduction Project, Solano County, California (Appendix A, Figures 1, 2). As construction of the well pad proposed for the parcel will involve ground disturbance, a cultural resource study was conducted in compliance with Section 21084.1 of the California Environmental Quality Act (CEQA). Given that no significant cultural resources were found during the study, our response will be in a letter format rather than a stand-alone assessment report. Therefore, general background information on the cultural setting of the area is included in summary form only.

Project Description and Location

The project area is situated in Section 11 of Township 3 North, Range 1 East, as shown on the Antioch North, California (1978) 7.5' USGS topographic quadrangle (Appendix A, Figure 3).

The proposed project constitutes construction of an 8 acre well pad on Coco Properties LLC's land south of Montezuma Hills Road, approximately 2 miles from Bird's Landing. The entrance to the project area is on Montezuma Hills Road. The project area is situated within the Montezuma Hills and is located approximately 3 miles north of the confluence of the San Joaquin and Sacramento Rivers. The elevation of the project area is approximately 250 feet above sea level.

Setting

The project area is located within the Montezuma Hills, a formation of gently rolling uplands lying between 10 and 250 feet above mean sea level northwest of the confluence of the Sacramento and San Joaquin Rivers. The area is surrounded by low lying marshes, fragmented islands and dendritic sloughs and channels of the delta and Suisun Bay to the south and east, the alluvial plains of the Central Valley to the north, and the Coast Ranges to the west. The dominant native vegetation in the hills consists of Purple Needlegrass (*Stipa pulchra*) (Schoenherr 1992:520), a characteristic species of the Central Valley prairie. Today, wheat cultivation replaces the native flora and the hills are also used for livestock grazing. Native trees such as oak are sparse in the region and it is not clear if this scarcity is due to clearance for agricultural purposes or represents the natural distribution of the trees in the hills.

Native fauna in the region included pronghorn (*Antilocapra americana*), deer (*Odocoileus hemionus*), jackrabbit (*Lepus californicus*), Beechey ground squirrel (*Spermophilus beecheyi*), kangaroo rat (*Dipodomys heermanni*), pocket gophers (*Thomomys bottae*) and possibly tule elk (*Cervus elophus nannodes*) (Schoenherr 1992:549-552).

Today the Montezuma Hills are arid with only seasonal and ephemeral drainages crossing the landscape (USFS 1998). The climate is typically Californian, temperate with average temperatures varying between 58° and 62° Fahrenheit annually. Most precipitation occurs as rain with 16 to 20 inches per year (USFS 1998).

Cultural Setting

Prehistory

The project area is located within the boundaries of the Delta subregion of the Central Valley archaeological region defined by Moratto (1984), however the prehistory of the area is primarily based on the majority of known prehistoric archaeological sites that occur further to the east, closer to the delta and the Sacramento River. Very few prehistoric sites have been investigated in the vicinity of the project area, and no prehistoric sites are known within the project area itself. The following discussion is largely based on Moratto (1984) with other contributions noted.

The Delta archaeological subregion is characterized by deeply buried sites on the alluvial plain and deeply stratified mounded sites situated on small knolls that rise above the flood plain. The earliest evidence of the widespread occupation of the Delta region appears around 4500 years ago and is characterized by the Windmiller Pattern. Known Windmiller Pattern sites are typically located on low rises or knolls in the floodplains of creeks or rivers. These provided protection from seasonal floods and were close to several different settings (e.g., riparian, marsh, grassland) with a variety of biotic communities. The Windmiller Pattern is identified by the cemeteries which contain bodies

laid on the stomach and extended with the head oriented to the west. Bodies are occasionally found resting on the back or in other positions, but are typically found with abundant grave goods. The large projectile points indicate that animals were hunted using spears or darts. Baked clay net sinkers, bone fish hooks and spears, and the faunal remains at Windmiller Pattern sites indicate that these early inhabitants relied upon both hunting and fishing for sustenance. Ground stone tools such as mortars and milling slabs indicate that they also relied upon ground vegetal foods such as seeds, nuts and roots. Charmstones, quartz crystals, bone awls and needles, shell beads and ornaments from abalone are also characteristic of the Windmiller Pattern (Beardsley 1948; Heizer 1949; Heizer and Fenenga 1939; Lillard et al. 1939; Ragir 1972; Schulz 1970).

The Berkeley Pattern appeared around 2500 years ago lasting to about 1500 years ago and although it overlapped the Windmiller Pattern, it persisted after the Windmiller was no longer present. Sites with both of these archaeological patterns are found throughout central California and are not unique to the Delta subregion. Berkeley Pattern sites are characterized by deep midden deposits suggesting larger residential group size and greater frequency of site reuse or even a greater degree of sedentism than that indicated by the Windmiller Pattern sites. Berkeley Pattern burials are characterized by bodies placed in a tightly flexed position. Burials are often found interspersed with evidence of occupation. Fewer burials are associated with grave goods. When they are found, grave goods include bone tools, groundstone, occasional quartz crystals, and some shell beads of different styles than those found with the Windmiller Pattern graves.

The Augustine Pattern replaced the Berkeley Pattern beginning around 1500 years ago and lasted through historic times. Sites appear to be even larger and more intensively occupied (larger populations, longer stays) than with the Berkeley Pattern. Graves continue to be interspersed with living areas and bodies are typically placed in the flexed position. Evidence of cremations appears and becomes more frequent approaching the historic period. Grave goods increase and are quite extravagant with some burials, sometimes including thousands of shell beads and clusters of elaborate abalone ornaments. Groundstone tool styles change but their frequency shows an increased importance of acorns and seeds in the diet. Projectile points are much smaller than in preceding periods, indicating the adoption of the bow and arrow.

The lack of known prehistoric archaeological sites in the project area may be due to the relative lack of reliable water and associated resources. Large village sites and cemetery sites tend to be located within a few hundred feet of perennial water sources in central California and the Delta subregion is no exception. The intermittent and seasonal nature of the waterways in the project area could explain the seeming absence of substantial archaeological deposits. The prairie uplands were more likely visited on a seasonal basis by a reduced number of people, most likely a small hunting group on a trip of limited duration. The kinds of archaeological remains we might expect to find within the project area would be scanty and nearly invisible. Remains of a campfire, a lost arrowhead, or the minor debris from the resharpening of a spear point or arrow might be all that remains of the prehistoric use of this landscape.

Ethnography

The project area represents a landscape that was a nexus for different Native American groups in recent prehistory and historic times. Typically in California, the landscapes with significant resources, such as perennial waterways or clusters of oak trees, were not shared between groups. Different scholars associate the Montezuma Hills region with different groups and it may be that the area was visited by different groups sporadically but claimed by none. The project area is alternately associated with the Southeastern Patwin (Bennyhoff 1977:164; Johnson 1978:Figure 1; Kroeber 1925:Plate 1), the Plains Miwok (Levy 1978:Figure 1; Theodoratus et al. 1980:Map 2) and the Bay Miwok (Bennyhoff 1977:164; Levy 1978:Figure 1; Theodoratus et al. 1980:Map 2). The Bay Miwok village of Ompin was located approximately 4 miles southeast of the project area (Levy 1978:Figure 1) and it is likely that the Bay Miwok dominated use of the area most recently.

The Bay Miwok's territory encompassed the southeastern portion of the Montezuma Hills near Rio Vista and extended west to encircle the town of Walnut Creek. The southern part of the Bay Miwok land included Mount Diablo and extended east as far as Plains Miwok territory in the vicinity of Sherman Island (Levy 1978:Figure 1).

The Bay Miwok distributed themselves into tribelets that consisted of a village or groups of villages that shared linguistic or kinship affinities. Theodoratus et al. (1980:78) estimated that the average population of Bay Miwok tribelets was 300 persons. The Montezuma Hills were not occupied permanently by the Ompin or their closest neighbors, the Southern Patwin and Plains Miwok (Bennyhoff 1977:146). Settlements were located near permanent watercourses, near intermittent streams (in drier areas), and on high ground when near the Delta (Theodoratus et al. 1980). The Bay Miwok probably followed a seasonal pattern to acquire necessary food and other materials. The Ompin tribelet, in particular, would have visited the Montezuma Hills in spring and summer to hunt pronghorn, jackrabbit, and possibly tule elk (Theodoratus et al. 1980). Seed bearing grasses and sedges may have been available during this interval as well. Resources available in the Delta and the surrounding marshlands included deer, pronghorn, tule elk, rodents, waterfowl, freshwater mussels and clams, fish, and various insects (Levy 1978).

The Bay Miwok constructed several types of structures. Conical thatch structures covered with tule mats were commonly used as residences both along the Delta and in uplands such as the Montezuma Hills. The Bay Miwok constructed semi-subterranean earth-covered lodges that served as winter homes. Other structures included acorn granaries, menstrual huts, sweathouses, and assembly houses. Assembly houses comprised two types: a semi-subterranean earth lodge and a circular brush enclosure. The Bay Miwok made the former structure a ritual and social focal point. The brush enclosure, on the other hand, provided space for ceremonies (Levy 1978).

Miwok technology included bone, stone, antler, wood and textile tools. Hunting was accomplished with the use of the bow and arrow, in addition to traps and snares. Basketry items included seed

beaters; cradles; sifters; rackets used in ball games; and baskets for storage, winnowing, parching, and carrying burdens. Other textiles included mats and cordage. Tule balsa boats were constructed for navigation on rivers and in the Delta (Levy 1978).

The Bay Miwok first came into contact with Europeans in the second half of the 18th century, when Spanish explorers entered the area. The Bay groups were the first of the Eastern Miwok to undergo conversion by Spanish missionaries. The first baptisms took place in 1794 and the last in 1827. A majority of the Bay and Plains converts were taken to Mission Dolores and Mission San Jose. It appears that many Bay and Plains Miwok tribelets disappeared through the combined effects of population removal to the missions and epidemics. Accounts exist of Miwok individuals who resisted missionization and fled to their villages. As a consequence, the Spanish formed military expeditions to recapture the fugitives. Initially the Miwok remained hidden within Delta lands, but they eventually learned to emulate Spanish warfare tactics. As a result, several tribelets initiated counter attacks in the form of raids on missions and ranchos, thereby invoking significant cultural changes (Heizer 1941).

With the arrival of trappers, gold miners, and settlers to California, the Miwok suffered exposure to new varieties of introduced diseases they had previously not experienced. Although this early contact with settlers resulted in a destructive impact on the Miwok population, relationships with settlers varied. While some hostilities occurred between the Sierra Miwok and miners, some of the Plains Miwok became involved in agricultural operations on the large land grants that were coming into existence then. After the United States annexed California, some of the Miwok were displaced to Central Valley locations, yet many remained on the rancherias established in the Sierra Nevada foothills. During the final decades of the 19th century and early years of the 20th century, the Miwok living on the foothill rancherias adapted to a new lifestyle. Subsistence through hunting and gathering was now augmented by seasonal wage labor on ranches and farms. As the reliance upon a cash income increased, traditional subsistence practices suffered. Several persons of Miwok descent still survive and maintain strong communities and action-oriented organizations (Levy 1978).

Historic Overview

The Delta was visited frequently by Spanish explorers. Pedro Fages scouted the shores of San Francisco Bay in search of a suitable mission site and by 1772 had traveled as far inland as the San Joaquin River (Kyle 1990; Thompson 1958). Colonel Juan Bautista de Anza explored the same territory in 1776. The Spanish launched explorations of the Sacramento River as well, beginning with Francisco Eliza's expedition up that river. Between 1806 and 1817, mission site reconnaissance expeditions were conducted by a number of explorers, including Gabriel Moraga (1806, 1808), Father Ramon Abella (1811), Jose Antonio Sanchez (1811), and Father Narciso Duran (1817) (Beck and Haase 1974).

Euro-American encroachment into the Montezuma Hills began in 1844 when John Bidwell (1819-1900) petitioned the Mexican government for a land grant in southeastern Solano County (Kyle 1990). Manuel Micheltorena, the 13th governor of Mexican Alta California, made the grant to Bidwell that same year for the 17,726-acre Rancho Los Ulpinos. The grant was located on the west bank of the Sacramento River, east of the project area (Beck and Haase 1974; Kyle 1990; Gregory 1912; Hunt 1926). Bidwell built an adobe house in the vicinity of present-day Rio Vista, and attempted to cultivate the land. Bidwell's efforts at agriculture, as well as those of subsequent settlers on the ranch, were unsuccessful; although one settler went on to establish the town that became Rio Vista (Hunt 1926).

The second thrust of Euro-American settlement occurred in 1846 with the establishment of the Hastings Adobe. The adobe is named for Lansford W. Hastings, a lawyer who arrived in California from Oregon in 1843. Active in early American settlement of the Montezuma Hills region, he traveled extensively in an attempt to draw new settlers. Hastings returned to the East Coast in 1844 and published a book titled *The Emigrant's Guide*. Upon his return to California, Hastings was chosen as an agent for the Mormon Church to determine a suitable location for a colony in Mexican California. He chose a site at the head of Suisun Bay, and in 1846 laid out plans for a town at this location. Hastings constructed an adobe for himself which he named Montezuma House. The American occupation of California in 1846 dashed Hastings' hope for a land grant from the Mexican government. The annexation of California as a territory of the United States also prompted Mormons to lose interest in the Montezuma Hills area as a colony site, because they had suffered previous mistreatment from non-Mormons elsewhere in the country. Three years later, Hastings abandoned the adobe (Hunt 1926; Kyle 1990; Theodoratus et al. 1980).

The adobe was reoccupied in 1853 by Lindsay Powell Marshall, Sr. and his sons John and Charles Knox. Marshall, a native of Booneville, Missouri, was a land speculator and cattle rancher who had acquired land in Benicia in 1852. Marshall and his sons took possession of the Hastings Adobe as squatters, although they purchased the property from Hastings in 1854 (Gregory 1912; Kyle 1990; Theodoratus et al. 1980). The Marshalls raised livestock on the ranch and expanded their landholdings by systematically acquiring additional acreage.

Through a combination of cash entry patents, a homestead patent, and patents of swamp and overflow land, the Marshall family had added more than 1,000 acres to their holdings by 1873. From 1866 to 1873, the Marshalls shifted the emphasis of their agricultural enterprise from cattle ranching to small-scale farming and dairying. Winter wheat was a prominent product of the Marshall ranch. Portions of the Marshall ranch were sold to John Kierce and Edward Jenkins by 1880, and Samuel O. Stratton acquired the adobe in the 1890s. The Stratton family continued to farm the property, dairying and cultivating grain, until 1964 (California Death Index 1940-1997; Theodoratus et al. 1980; United States Federal Census 1900, 1910, 1930).

Further development of agriculture in the Montezuma Hills area was stimulated by Delta reclamation efforts from the 1850s to the early 20th century. Following the precedent of a similar act in Arkansas (Arkansas Swamp Land Act), the California State Legislature passed an act to provide for the sale of overflow and swamp land in 1855, the proceeds of which sales were to facilitate land reclamation. Under this act, up to 320 acres of land per person could be sold at $1 per acre. Swamp and overflow land could be bought on credit, although the purchaser was obligated to reclaim half the land purchased within 5 years. The attempts of individual landowners to build levees and reclaim swamp and overflow land in the 1850s proved futile in most cases. Individual shoestring levees were not sufficient to hold waters at bay; a network of levees and drains was required, necessitating a large amount of capital investment beyond the scope of most individual landholders.

In 1861 the state legislature created the State Board of Reclamation Commissioners and authorized it to form reclamation districts (McGowan 1961). In an attempt to enclose large areas within natural levees, 32 districts were formed. After the board was dissolved in 1866, control of swamp and overflowed land fell to the counties (Thompson 1958). Acreage limitations were removed and land incentive programs were instituted. When a landowner certified that $2 per acre had been spent on reclamation, the purchase price of the land was refunded to the deed holder. Speculators took advantage of this offer and a period of opportunistic and often irrational levee building followed (McGowan 1961; Thompson 1958).

Among the agriculturists to take advantage of the availability of land was Emery Upham. Upham began acquiring land and established a large livestock and ranching operation just north of Collinsville in 1865. By 1870 Upham owned 6,500 acres of the Montezuma Hills and adjacent slough areas. Upham increased his acreage through 1880 by which time his holdings comprised 8,100 acres, including the town of Collinsville and the project area. Upham grew wheat and raised swine, sheep and dairy and beef cattle. Upon his death in 1897 Upham's land was divided and sold to private landowners, who continued to farm and ranch on the land (William Self Associates 1993).

The Old Shiloh Church and associated cemetery located at 2595 and 2597 Shiloh Road, approximately 5 miles northwest of the project area, was built in 1870. Members of the Cumberland Presbyterians built the church with proceeds from burial plot sales on the property. The cemetery contains headstones with dates as early at the 1870s. The church was destroyed by fire in 1875 and rebuilt in 1876. The cemetery served as the final resting place for many of the area's early pioneers, including John Bird, after whom Bird's Landing is named. In 1955 the church was restored and in 1969 the Old Shiloh Church was named a Solano County Point of Historical Interest.

Transportation to and from the Montezuma Hills was limited to two means until 1913. Smaller Delta towns such as Collinsville relied on river ferries to connect them to rail transportation and other river towns. L. W. Hastings established a ferry near Collinsville in the late 1880s. The ferry connected Collinsville with the opposite shore of the Delta (Hunt 1926). To reach inland destinations such as Fairfield, residents of the Montezuma Hills region were dependent on a

network of roads. Through the 1870s road development was limited in this area, comprising a few tracks and unimproved roads (Henning 1872). The present system of roads from Montezuma Hills to Fairfield, Rio Vista, and Dixon was established between 1872 and 1890 (Henning 1872; Eager 1890).

The 1870s saw the expansion of railroads throughout California. Several different routes connected the major towns of the Delta area, such as Benicia, Vallejo, Fairfield, and Pittsburg, to the rest of California. The Oakland, Antioch, & Eastern Railway Co. (OA&E) (established March 28, 1911), a predecessor to the Sacramento Northern Railway, extended its Oakland-to-Sacramento line through the Montezuma Hills between 1913 and 1914. The OA&E ran a 93-mile route from San Francisco to Sacramento providing mostly passenger service as well as transporting agricultural goods out of the Montezuma Hills enabling rapid transport of agricultural products to a wide market (C. F. Weber & Co. 1914; Robertson 1998). In 1928, the OA&E was bought by the Sacramento Northern Railway, owned by Western Pacific. By 1941, passenger service on this section of the railway was abandoned. During WWII, freight business increased, servicing the Pittsburg steel plant, the Fairfield Army Air Corps Base, the Concord Naval Weapons Depot, and the Oakland Army Terminal. With the abandonment of the Suisun Strait Ferry, which used to take cars across the strait, the line was de-electrified in 1953. Some excursions along this portion of the railway continued through the 1960s and 1970s. The Union Pacific acquired the line in 1987 by merger and decided to abandon it. The Bay Area Electric Railroad Association (BAERA) raised the necessary money to lease 22 miles from Montezuma to Dozier and west to Canon near Fairfield. Today BAERA operates a "Scenic Limited" service in April and a "Pumpkin Patch" service in October along the route (Western Railway Museum 2009).

Results of the Records Search

On behalf of WSA, staff at the California Historical Resources Information System, Northwest Information Center (NWIC) at Sonoma State University conducted a records search of the project vicinity on December 23, 2008 (File No. 08-0725). Information on previous archaeological surveys and recorded sites within a 1-mile radius of the project area was gathered to identify and evaluate the potential for the presence of cultural resources. The study included a review of archaeological, ethnographic, historical, and environmental literature as well as records and maps on file at the NWIC.

Historic maps reviewed included: 1872 J.S. Henning, Map of Solano County, California 1878; 1877 Map of Solano County, California; 1908 USGS Antioch Quadrangle; and the 1853 and 1872 GLO Plat Maps, T3N, R1E. No cultural resources were identified in the vicinity of the project.

No listings in the project area were found in the California Inventory of Historic Resources for Solano County. The Office of Historic Preservation Historic Properties Directory has two entries for

Birds Landing, the 1875 Bird and Dinkelspiel Store at 2145 Collinsville Road and the 1876 Old Shiloh Church on Shiloh Road. However, neither building is within one mile of the project area.

Results of the records search indicated that no recorded archaeological sites are within the project area. A former ranch site (P-48-518) is within one mile of the project area, 3/4-mile from the proposed well pad (Table 1). One archaeological study has been conducted that encompasses the project area (S-10481). No evidence of prehistoric or historic material was recorded by this survey (Table 2). However, the report notes the presence of two "historic compounds" within their study area, although neither was evaluated nor researched further. One is located at the intersection of Montezuma Road and Bird's Landing Road, and the other is on Talbert Lane in Section 25 (Holman 1987). Both are over one mile from the project area, although the former is barely so. This is the family home of Richard Russell (of Coco Properties LLC) going back four generations (Richard Russell 2008, pers. comm.), and the current home of Ian Anderson who currently farms the project area.

Table 1 Cultural resources identified within 1-mile of the project boundaries

Resource	Quad Map 7.5-Minute	Description	Proximity to Project
P-48-518	Antioch North	Historic site that represents the remnants of two ranching or farming-related buildings. There are three features recorded: a row of eucalyptus trees; a square concrete footing; and a square raised wooden platform.	Approximately 3/4-mile northeast.

Table 2 Cultural resources study encompassing the project boundaries

Study #	Author	Date	Title	Sites
S-10481	Miley Paul Holman	1987	Archaeological Field Inspection of the Montezuma Hills Proposed Wind Farm Area, Solano County, California (letter report).	None, but 2 "historic compounds" are noted but not evaluated

Five archaeological studies have been conducted within 1-mile radius of the project area (S-11766, 13263, 24272, 34412, and 11826). No evidence of prehistoric or historic cultural resources was found within 1 mile of the project area as the result of these investigations (Table 3). However, S-011826 reported 40 sites in total, 23 of them in Solano County, while S-24272 reported 9 sites in its study area. Again, none of these sites are within one mile of the project area.

Table 3 Cultural resources studies conducted within 1-mile of the project boundaries

Study #	Author	Date	Title	Sites
S-11766	Miley Paul Holman	1989	Archaeological Literature Review and Field Inspection of Areas 1 through 9, Montezuma Hills, Solano County, California (letter report).	None

S-11826	Dorothea J. Theodoratus Mary Pyle Peters Clinton M. Blount Pamela J. McGuire Richard D. Ambro Michael Crist Billy J. Peck and Myrna Saxe	1980	Montezuma I and II Cultural Resources.	40 total. In Solano County: CA-SOL-33 (Hastings Adobe) CA-SOL-34 CA-SOL-282H CA-SOL-283H CA-SOL-284H CA-SOL-285H CA-SOL-286H CA-SOL-287H CA-SOL-288H CA-SOL-289H CA-SOL-290H CA-SOL-291H CA-SOL-292H CA-SOL-293H CA-SOL-294H CA-SOL-295H CA-SOL-296H CA-SOL-297H CA-SOL-298H CA-SOL-299H CA-SOL-300H CA-SOL-301H CA-SOL-302H
S-13263	Kim J. Tremaine	1991	An Archaeological Inspection of the Proposed Collinsville Wind Turbine Generation Site and Transmission Line.	None
S-24272	Jones & Stokes	2001	Cultural Resources Inventory Report for High Winds, LLC's, Proposed Wind Turbine Project in the Montezuma Hills of Solano County, California.	P-48-000518 P-48-000519 P-48-000520 P-48-000521 P-48-000522 P-48-000523 P-48-000524 P-48-000525 P-48-000526
S-34412	Eric Wohlgemuth	2005	Archaeological Reconnaissance of the Pacific Gas and Electric Company 230kV Delta Transmission Line Reconductoring Project, Solano, Sacramento, and Contra Costa Counties, California.	None

Native American Heritage Commission Consultation

On December 22, 2008, James M. Allan, Vice-President of WSA, contacted the Native American Heritage Commission (NAHC) by letter to request information on known Native American traditional or cultural properties within the project area, and to request a listing of individuals or groups with cultural affiliation to the project area. NAHC staff member Ms. Debbie Pilas-Treadway replied to the WSA letter on December 23, 2008, stating that "a record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area." Included in the NAHC response was a list of interested Native American contacts, which is appended to this letter report. See attached Native American Heritage Commission Consultation and List of Native American Contacts (Appendix B).

On January 12, 2009, WSA sent letters to the seven contacts identified by the NAHC. Copies of the correspondence are provided Appendix C. No comments were received. Follow-up phone calls were placed on January 27 and February 2 and 3, 2009. Kesner Flores of the Wintun/Patwin Indian Tribe answered on January 27, 2009 that he wasn't aware of anything in the project area but requested that we resubmit our request by email so that he could send us some NAGPRA information. WSA staff archaeologist Jeffrey Schaeffer emailed our request to Mr. Flores and on February 10, 2009 Mr. Flores responded in an email to Mr. Schaefer: "Likelyhood can be considered low to moderate. Here is the protocol in the event of a find. Thank you for the contact." Attached to the email was the text of the Patwin Wintun Cultural Management Response Plan. Mr. Flores' email and the Patwin Wintun Cultural Management Response Plan are attached in Appendix D.

On March 16, 2009, WSA received a letter from Marshall McKay, Tribal Chairman of the Rumsey Band of Wintun Indians. In his letter, Mr. McKay states that:

> the Rumsey Band of Wintun Indians, of California is not aware of any known cultural resources on this site. However, as the project progresses, if any new information or historic remains are found, we do have a process to protect such important and sacred artifacts. It is always suggested that a tribal monitor be present for any earthmoving activities.

Mr. McKay goes on to request that he and Mr. Leland Kinter are be contacted if tribal cultural items or Native American human remains are found, with Ms. Michelle LaPena of LaPena Law Corporation being copied on all communications. Mr. McKay's letter is included in Appendix D. No other responses were received. The results of WSA efforts are also summarized in Appendix D.

Results of the Field Survey

WSA Project Director, Paul Farnsworth, Ph.D., conducted a pedestrian survey of the proposed project area on December 18, 2008. During the survey, the project area was evaluated for the presence of historic or prehistoric site indicators. Historic site indicators include, but are not limited to foundations, fence lines, ditches, standing buildings, objects or structures such as sheds, or concentrations of materials at least 50 years in age, such as domestic refuse (glass bottles, ceramics, toys, buttons or leather shoes), or refuse from other pursuits such as agriculture (e.g., metal tanks, farm machinery parts, horseshoes) or structural materials (e.g., nails, glass window panes, corrugated metal, wood posts or planks, metal pipes and fittings, etc.). Prehistoric site indicators include, but are not limited to areas of darker soil with concentrations of ash, charcoal, bits of animal bone (burned or unburned), shell, flaked stone, groundstone, or even human bone. Prior to the survey, satellite imagery available on Google Earth was consulted, as were USGS 7.5 minute topographic maps of the project area. In addition, the property owner, Richard Russell was consulted about potential historic structures in the project area. According to Mr. Russell, no structures have ever been located within the project area (Richard Russell 2008, pers. comm.). No evidence of prehistoric or historic cultural resources was observed within the area proposed for the project during the survey, although surface visibility was moderate throughout most of the survey areas.

The archaeological field survey began at the southern end of the project area, and proceeded northward along the ridge. At the northern end of the survey area the surveyor paced 15 m west and headed south to the southern edge of the survey area. The process was repeated with transects at 15 m intervals along the top of the ridge. The survey transects ran slightly east of north and the survey progressed west across the survey area at 15 m intervals. The survey area is crossed by an E-W dirt road and had another dirt road running approximately north-south through the area. The survey area measured approximately 8 acres. Much of the area was generally flat, with a gentle slope west to the west of the dirt road into a shallow valley and a relatively steep slope to the southeast at the eastern edge of the survey area.

Most of the area, excluding the southeast quarter, had been disked earlier in the year according to the tenant farmer (Ian Anderson 2008, pers. comm.), but at the time of survey a short, green grass covered much of the area, while approximately 1 ft. high stalks of a previously harvested cereal crop remained in rows throughout the survey area. The southeastern corner of the survey area, as well as a strip 10-20 m wide on either side of the dirt roads, had not been disked or planted, and had much denser grass cover and hence very limited surface visibility. In the immediate vicinity of the roads (a few meters to either side) surface visibility was approximately 60%, but as a whole, surface visibility averaged 30% and was rarely more than 40%. This was, in part, due to the general absence of animal burrows and livestock trails in the survey area, while the flat topography reduced the incidence of soil erosion areas. The soil encountered was a relatively friable, brown to dark brown loam with some yellow mottling in places and with calcareous rock fragments usually

approximately ¼-in. diameter but ranging up to 3 in. diameter. No prehistoric or historic cultural features or materials were observed in the survey area.

Recommendations

No prehistoric or historic cultural features or materials were observed in the survey area. The results of the record search and the visual inspection of the project area indicate that the likelihood of encountering significant cultural resources within the project area is very low. However, should any previously undiscovered historic or prehistoric resources be found during construction, work should stop, in accordance with CEQA regulations, until such time that the resource can be evaluated by a qualified archaeologist and appropriate mitigative action taken as determined necessary by the County Lead Agency.

In the event that Native American human remains or funerary objects are discovered, the provisions of the California Health and Safety Code should be followed. Section 7050.5(b) of the California Health and Safety Code states:

> *In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code.*

The County Coroner, upon recognizing the remains as being of Native American origin, is responsible to contact the Native American Heritage Commission within 24 hours. The Commission has various powers and duties to provide for the ultimate disposition of any Native American remains, as does the assigned Most Likely Descendant. Sections 5097.98 and 5097.99 of the Public Resources Code also call for "protection to Native American human burials and skeletal remains from vandalism and inadvertent destruction."

Please don't hesitate to give me a call if we may be of further assistance or answer any questions that you may have regarding the survey or this report.

Thank you for the opportunity to provide our services to you on this project. If we can be of any further service, please do not hesitate to contact us.

WILLIAM SELF ASSOCIATES, INC.

Paul Farnsworth

Paul Farnsworth, Ph.D., RPA
Project Director.

Attachments

References

Beardsley, Richard K.
1948 Cultural Sequences in Central California. *American Antiquity* 14(1):1-28.

Beck, Warren. A., and Ynez. D. Haase
1974 *Historical Atlas of California.* University of Oklahoma Press, Norman, OK.

Bennyhoff, James A.
1977 *Ethnogeography of the Plains Miwok.* Center for Archaeological Research at Davis Publication 5. University of California, Davis.

California Death Index
1940-1997 Samuel E. Stratton. California Death Index. http://www.ancestry.com/. Accessed 1/7/2009.

Eager, Edward
1890 *Official Map of the County of Solano, California.* Solano County Board of Supervisors, San Francisco, CA.

Gregory, Tom
1912 *History of Solano and Napa Counties, California, with biographical sketches of the leading men and women of the counties, who have been identified with its growth and development from the early days to the present time.* Historic Record Company, Los Angeles, CA.

Heizer, Robert F.
1941 The Direct-Historical Approach in California Archaeology. *American Antiquity* 7:98–122.

1949 The Archaeology of Central California I: The Early Horizon. *University of California Anthropological Records* 12(1):1-84.

Heizer, Robert F., and Franklin Fenenga
1939 Archaeological Horizons in Central California. *American Anthropologist* 41:378–399.

Henning, J. S.
1872 *Map of Solano County, California.* Britton & Rey, San Francisco, CA.

Holman, Miley P.
1987 Archaeological Field Inspection of the Montezuma Hills Proposed Wind Farm Area, Solano County, California. Holman & Associates, San Francisco, CA. Letter Report on file, Northwest Information Center, Rohnert Park, CA (S-10481).

1989 Archaeological Literature Review and Field Inspection of Areas 1 through 9, Montezuma Hills, Solano County, California. Holman & Associates, San Francisco, CA. Letter Report on file, Northwest Information Center, Rohnert Park, CA (S-11766).

Hunt, Marguerite

1926 History of Solano County. In *History of Solano County and Napa County, from their Earliest Settlement to the Present Time*, Vol. I, Marguerite Hunt and Harry L. Gunn, pp. 9–252. S. J. Clarke, Chicago, IL.

Johnson, Patti J.

1978 Patwin. In *Handbook of North American Indians*, Vol. 8, *California*, Robert. F. Heizer, editor, pp. 350–360. Smithsonian Institution, Washington, DC.

Jones & Stokes, Inc.

2001 Cultural Resources Inventory Report for High Winds, LLC's, Proposed Wind Turbine Project in the Montezuma Hills of Solano County, California. Jones & Stokes, Inc., San Francisco, CA. Report on file, Northwest Information Center, Rohnert Park, CA (S-24272).

Kroeber, Alfred L.

1925 *Handbook of the Indians of California.* California Book Company, Berkeley, CA.

Kyle, Douglas E.

1990 *Historic Spots in California,* 4th edition. Stanford University Press, Stanford, CA.

Levy, Richard

1978 Eastern Miwok. In *Handbook of North American Indians,* Vol. 8,*California*, Robert F. Heizer, editor, pp. 398–413. Smithsonian Institution, Washington, DC.

Lillard, Jeremiah B., Robert F. Heizer, and Franklin Fenenga

1939 *An Introduction to the Archaeology of Central California.* Sacramento Junior College, Department of Anthropology Bulletin 2. Sacramento, CA.

McGowan, Joseph A.

1961 *History of the Sacramento Valley.* Lewis Historical Publishing Company, New York, NY.

Moratto, Michael J.

1984 *California Archaeology.* Academic Press, Orlando, FL.

Ragir, Sonia

1972 The Early Horizon in Central California Prehistory. *Contributions of the University of California Archaeological Research Facility* No. 15. Berkeley.

Robertson, Donald B.
1998 *Encyclopedia of Western Railroad History, Volume IV, California.* The Caxton Printers, Caldwell, ID.

Schoenherr, Allan A.
1992 *A Natural History of California.* California Natural History Guides 56, University of California Press, Berkeley.

Schulz, Peter D.
1970 *Solar Burial Orientation and Paleodemography in the Central California Windmiller Tradition.* Center for Archaeological Research at Davis Publication 2:185–198. University of California, Davis.

Theodoratus, Dorothea J., Mary P. Peters, Clinton M. Blount, Pamela J. McGuire, Richard D. Ambro, Michael Crist, Billy J. Peck, and Myrna Saxe.
1980 Montezuma I & II: Cultural Resources. Theodoratus Cultural Research, Fair Oaks, CA and Archaeological and Environmental Services, Fresno, CA. Prepared for Pacific Gas and Electric Company, San Francisco, CA. Report on file, Northwest Information Center, Rohnert Park, CA (S-11826).

Thompson, J.
1958 *The Settlement and Geography of the Sacramento-San Joaquin Delta, California.* Doctoral dissertation, Stanford University, Palo Alto, CA. University Microfilms International, Ann Arbor, MI.

Tremaine, Kim J.
1991 An Archaeological Inspection of the Proposed Collinsville Wind Turbine Generation Site and Transmission Line. Biosystems Analysis, Inc. Report on file, Northwest Information Center, Rohnert Park, CA (S-13263).

United States Federal Census
1900 Samuel O. Stratton. Twelfth Census of the United States. http://www.ancestry.com/. Accessed 1/7/2009.

1910 Samuel O. Stratton. Thirteenth Census of the United States. http://www.ancestry.com/. Accessed 1/7/2009.

1930 Samuel E. Stratton. Fifteenth Census of the United States. http://www.ancestry.com/. Accessed 1/7/2009.

United States Forest Service (USFS)
1998 *Ecological Subregions of California.* United States Forest Service, Pacific Southwest Region, San Francisco, CA. Electronic edition http://www.fs.fed.us/r5/projects/ecoregions/. Accessed 1/7/2009.

Weber, C.F. & Co.
1914 *Weber's Map of Solano County, California.* C.F. Weber & Co., San Francisco, CA.

Western Railway Museum
2009 Western Railway Museum. http://www.wrm.org/about/visitor_center.htm. Accessed 1/6/2009.

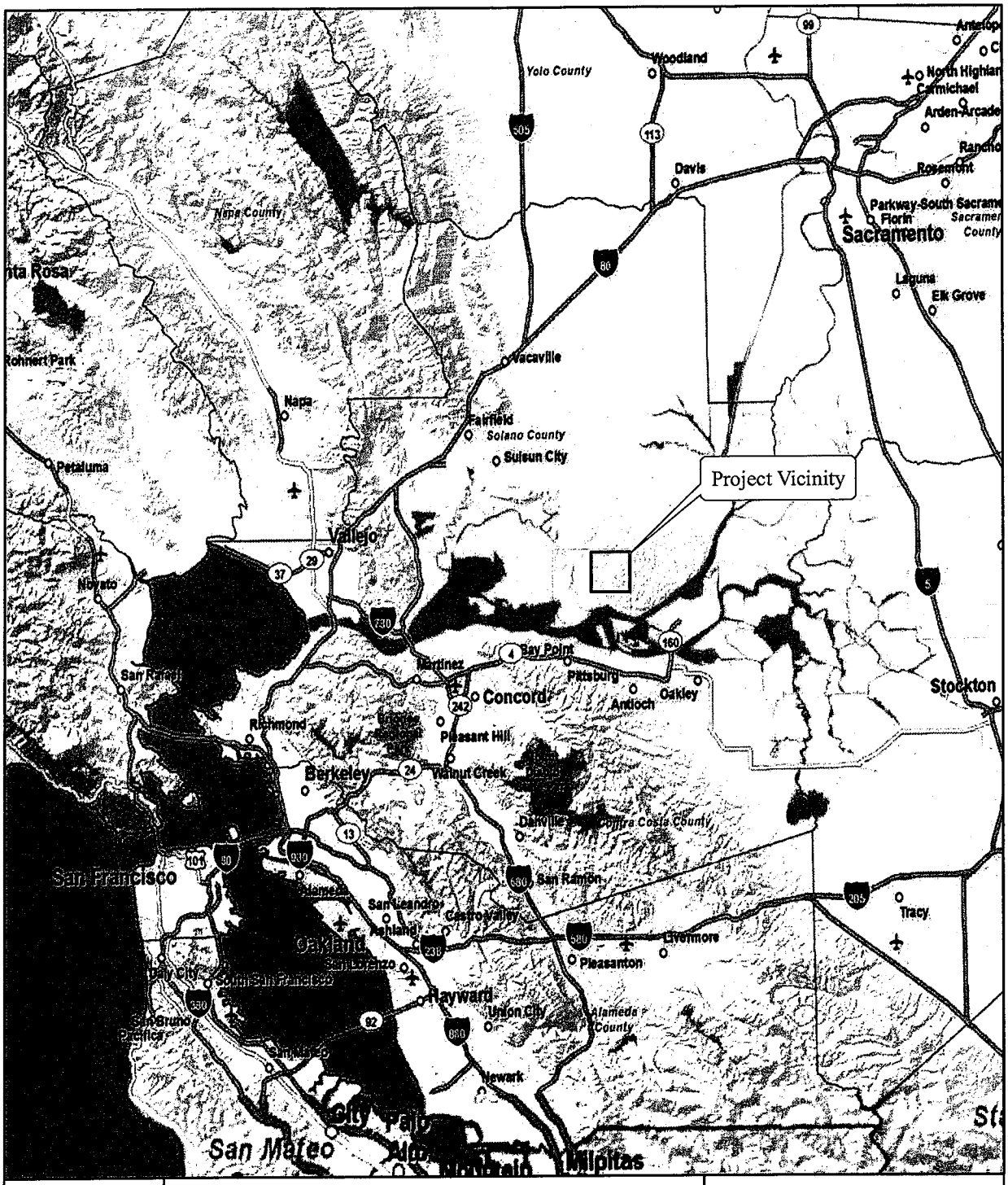
William Self Associates (WSA)
1993 Archeological Survey Report: Montezuma Wetlands Project, Solano County, California. William Self Associates, Orinda, CA. Prepared for Brady and Associates, Berkeley. Report on file, Northwest Information Center, Rohnert Park, CA (S-16522).

Wohlgemuth, Eric
2005 Archaeological Reconnaissance of the Pacific Gas and Electric Company 230kV Delta Transmission Line Reconductoring Project, Solano, Sacramento, and Contra Costa Counties, California. Far Western Anthropological Research Services, Inc., Davis, CA. Report on file, Northwest Information Center, Rohnert Park, CA (S-34412).

APPENDIX A

Figures

- Figure 1: Project Vicinity Map
- Figure 2: Project Area Map
- Figure 3: Project Location Map

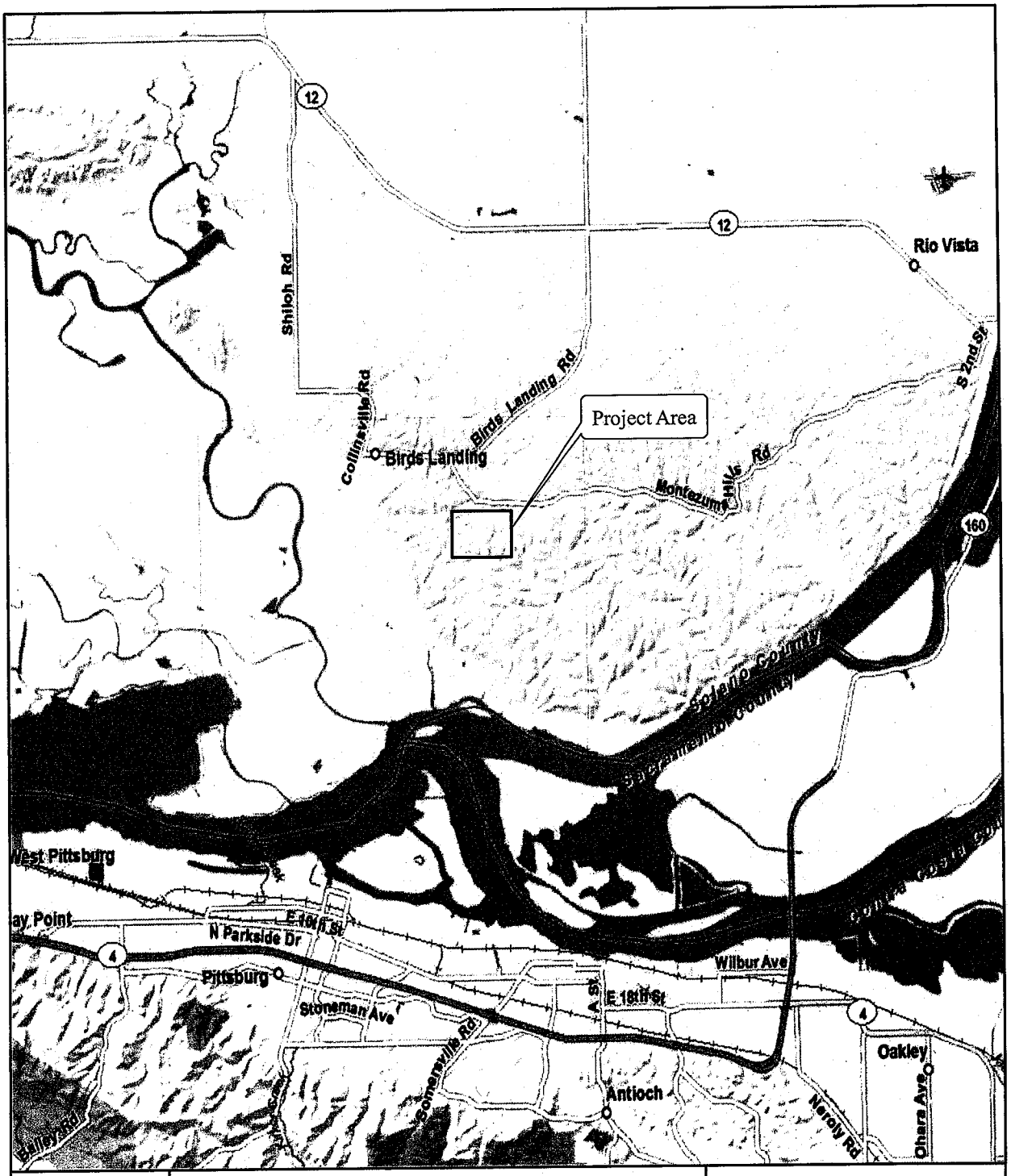


WSA

Project Vicinity Map

0 10 20 Miles

Figure 1
ASPEN
Northern California
CO2 Reduction Project
Solano County, CA

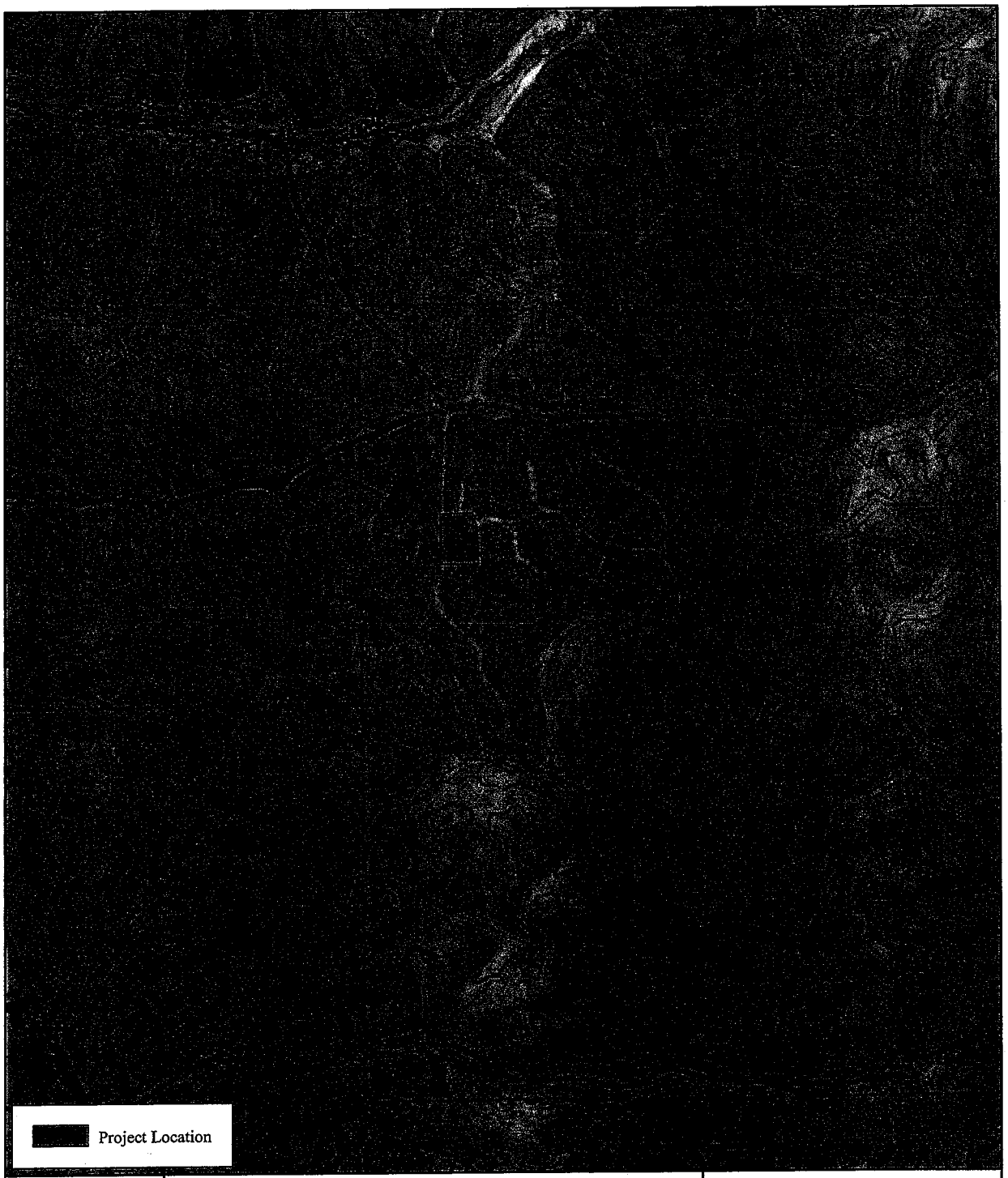


WSA

Project Area Map

0 2 4 Miles

Figure 2
ASPEN
Northern California
CO2 Reduction Project
Solano County, CA



WSA

Project Location Map

0 0.5 1 Miles

Figure 3
ASPEN
Northern California
CO2 Reduction Project
Solano County, CA

APPENDIX B

Native American Heritage Commission Consultation
And
List of Native American Contacts

December 22, 2008

Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, CA 95814
(916) 653-4082; Fax (916) 657-5390

RE: Shell CO2 Sequestration Project

Dear Native American Heritage Commission:

William Self Associates, Inc. (WSA) has been contracted by Aspen Environmental Group to assess potential impacts to cultural resources as part of the Shell CO2 Sequestration Project, Solano County, California. The project area is within Township 3 north, Range 1 east, Sections 11 and 14, of the Birds Landing and Antioch North 7.5' USGS topographic quadrangles, as shown on the attached map.

We bring this project to the attention of the Native American Heritage Commission with the desire to obtain, from your office, pertinent information regarding prehistoric, historic and/or ethnographic land use and sites of Native American traditional or cultural value that might be known to exist within the project vicinity, as depicted in the Sacred Lands database or other files. We would also appreciate obtaining a list of interested Native American tribal entities or individuals for the project area. We have contacted the North West Information Center at Sonoma State University, Rohnert Park to review their files as part of the background research on the project.

We would appreciate a response, at your earliest convenience, should you have information relative to this request. Should you have any questions, I can be reached at (925) 253-9070.

Thank you again for your assistance.

Sincerely,

WILLIAM SELF ASSOCIATES

James M. Allan, Ph.D., RPA
Vice-President

Attachment

P.O. Box 2192
61d Avenida de Orinda
Orinda CA 94563

William Self Associates, Inc.

Phone. 925-253-9070
Fax. 925-254-3553
Email. wself@williamsellassoc.com

STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
Fax (916) 657-5390
Web Site www.nahc.ca.gov

December 23, 2008

James M. Allan
Vice-President
William Self Associates, Inc.
PO Box 2192
61d Avenida de Orinda
Orinda, CA 94563

Sent by Fax: 925-254-3553
Number of Pages: 2

Re: Proposed Shell CO2 Sequestration Project, Solano County

Dear Mr. Allan:

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4038.

Sincerely,

Debbie Pilas-Treadway
Environmental Specialist III

Native American Contacts
Solano County
December 28, 2006

Kesner Flores
PO Box 1047 Wintun / Patwin
Wheatland , CA 95692
calnagpra@hotmail.com
925-586-8919

Cortina Band of Indians
Elaine Patterson, Chairperson
PO Box 1630 Wintun / Patwin
Williams , CA 95987
(530) 473-3274 - Voice
(530) 473-3190 - Voice
(530) 473-3301 - Fax

Cortina Band of Indians
Karen Flores, Vice Chairperson
PO Box 1630 Wintun / Patwin
Williams , CA 95987
(530) 473-3274 - Voice
(530) 473-3190 - Voice
(530) 473-3301 - Fax

Rumsey Indian Rancheria of Wintun
Marshall McKay, Chairperson
P.O. Box 18 Wintun (Patwin)
Brooks , CA 95606
(530) 796-3400
(530) 796-2143 Fax

Rumsey Indian Rancheria of Wintun
Leland Kinter, Native Cultural Renewal Committee
P.O. Box 18 Wintun (Patwin)
Brooks , CA 95606
(530) 979-6346
(530) 796-3400 - office
(530) 796-2143 Fax

Rumsey Indian Rancheria of Wintun
Cynthia Clarke, Native Cultural Renewal Committee
P.O. Box 18 Wintun (Patwin)
Brooks , CA 95606
(530) 796-3400 - office
(530) 796-2143 Fax

Wintun Environmental Protection Agency
P.O. Box 1839 Wintun (Patwin)
Williams , CA 95987
corwepa@hotmail.com
(530) 473-3318
(530) 473-3319
(530) 473-3320 - Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Shell CO2 Sequestration project, Solano County.

APPENDIX C

Native American Contact Letters

WSA

ACR

Consultants in Archaeology and Historic Preservation

www.williamself.com

January 12, 2009

Kesner Flores
PO Box 1047
Wheatland, CA 95692

RE: *Shell CO_2 Sequestration Project, Solano, California*

Dear Mr. Flores:

William Self Associates, Inc. (WSA) has been contracted to assess potential impacts to cultural resources as part of the Shell CO_2 Sequestration Project in Solano, California. The project area is located in Township 3 north, Range 1 east, Sections 11 and 14 as depicted on the attached map.

We would appreciate receiving any comments you may have regarding cultural resources or sacred sites issues within the immediate project area. If you could provide your comments in writing to the address below, or call me, we will make sure the comments are provided to our client as part of this project.

Feel free to provide comments in writing to the address below; or to call me. We will place a follow-up call on Monday, January 26, should you have information relative to this request.

Thanks again for your assistance.

Sincerely,

WILLIAM SELF ASSOCIATES

James M. Allan, Ph.D., RPA
Vice-President, Principal Project Director

Attachment

William Self Associates, Inc.
E-mail: wself@williamself.com

CORPORATE OFFICE: San Francisco Bay Area
PO Box 2192, 61 Avenida de Orinda
Orinda CA 94563
Phone: 925-253-9070/ 925-254-3553 fax

WSA
www.williamself.com

ACR
Consultants in Archaeology and Historic Preservation

January 12, 2009

Cortina Band of Indians
Elaine Patterson, Chairperson
P.O. Box 1630
Williams, CA 95987

RE: *Shell CO_2 Sequestration Project, Solano, California*

Dear Ms. Patterson:

William Self Associates, Inc. (WSA) has been contracted to assess potential impacts to cultural resources as part of the Shell CO_2 Sequestration Project in Solano, California. The project area is located in Township 3 north, Range 1 east, Sections 11 and 14 as depicted on the attached map.

We would appreciate receiving any comments you may have regarding cultural resources or sacred sites issues within the immediate project area. If you could provide your comments in writing to the address below, or call me, we will make sure the comments are provided to our client as part of this project.

Feel free to provide comments in writing to the address below, or to call me. We will place a follow-up call on Monday, January 26, should you have information relative to this request.

Thanks again for your assistance.

Sincerely,

WILLIAM SELF ASSOCIATES

James M. Allan, Ph.D., RPA
Vice-President, Principal Project Director

Attachment

William Self Associates, Inc.
E-mail: wself@williamself.com

CORPORATE OFFICE: San Francisco Bay Area
PO Box 2192, 61 Avenida de Orinda
Orinda CA 94563
Phone: 925-253-9070/ 925-254-3553 fax

WSA

Consultants in Archaeology and Historic Preservation

www.williamself.com

January 12, 2009

Cortina Band of Indians
Karen Flores, Vice Chairperson
P.O. Box 1630
Williams, CA 95987

RE: *Shell CO_2 Sequestration Project, Solano, California*

Dear Ms. Flores:

William Self Associates, Inc. (WSA) has been contracted to assess potential impacts to cultural resources as part of the Shell CO_2 Sequestration Project in Solano, California. The project area is located in Township 3 north, Range 1 east, Sections 11 and 14 as depicted on the attached map.

We would appreciate receiving any comments you may have regarding cultural resources or sacred sites issues within the immediate project area. If you could provide your comments in writing to the address below, or call me, we will make sure the comments are provided to our client as part of this project.

Feel free to provide comments in writing to the address below, or to call me. We will place a follow-up call on Monday, January 26, should you have information relative to this request.

Thanks again for your assistance.

Sincerely,

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January 12, 2008

Rumsey Indian Rancheria of Wintun
Leland Kinter, Native Cultural Renewal Committee
P.O. Box 18
Brooks, CA 95606

RE: *Shell CO_2 Sequestration Project, Solano, California*

Dear Mr. Kinter:

William Self Associates, Inc. (WSA) has been contracted to assess potential impacts to cultural resources as part of the Shell CO_2 Sequestration Project in Solano, California. The project area is located in Township 3 north, Range 1 east, Sections 11 and 14 as depicted on the attached map.

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January 12, 2008

Rumsey Indian Rancheria of Wintun
Cynthia Clarke, Native Cultural Renewal Committee
P.O. Box 18
Brooks, CA 95606

RE: *Shell CO_2 Sequestration Project, Solano, California*

Dear Ms. Clarke:

William Self Associates, Inc. (WSA) has been contracted to assess potential impacts to cultural resources as part of the Shell CO_2 Sequestration Project in Solano, California. The project area is located in Township 3 north, Range 1 east, Sections 11 and 14 as depicted on the attached map.

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WSA
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www.williamself.com

January 12, 2008

Wintun Environmental Protection Agency
P.O. Box 1839
Williams, CA 95987

RE: *Shell CO_2 Sequestration Project, Solano, California*

To whom it may concern:

William Self Associates, Inc. (WSA) has been contracted to assess potential impacts to cultural resources as part of the Shell CO_2 Sequestration Project in Solano, California. The project area is located in Township 3 north, Range 1 east, Sections 11 and 14 as depicted on the attached map.

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James M. Allan, Ph.D., RPA
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www.williamself.com

January 12, 2008

Rumsey Indian Rancheria of Wintun
Marshall McKay, Chairperson
P.O. Box 18
Brooks, CA 95606

RE: *Shell CO_2 Sequestration Project, Solano, California*

Dear Mr. McKay:

William Self Associates, Inc. (WSA) has been contracted to assess potential impacts to cultural resources as part of the Shell CO_2 Sequestration Project in Solano, California. The project area is located in Township 3 north, Range 1 east, Sections 11 and 14 as depicted on the attached map.

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James M. Allan, Ph.D., RPA
Vice-President, Principal Project Director

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APPENDIX D

Summary of Responses, Marshall McKay's Letter, Kesner Flores' Email Response and the Patwin Wintun Cultural Management Response Plan

Shell CO2 Sequestration Project, Solano County, CA

Contact Name	Affiliation	Phone No.	Contact by Mail	Contact by Phone #1	Contact by Phone #2
Kesner Flores	Wintun/Patwin	925-586-8919	Letter sent 1/12/09, no response	Talked to Kesner Flores who wasn't aware of anything in the project area but requested that we email him so that he could send us some NAGPRA information 1/27/09	Email response received 2/10/09: "Likelyhood can be considered low to moderate. Here is the protocol in the event of a find. Thank you for the contact." Copy of Patwin Wintun Cultural Management Response Plan attached to the email
Elaine Patterson	Wintun/Patwin	530-473-3274	Letter sent 1/12/09, no response	Talked to secretary, left a message 1/27/09	Talked to secretary, left a message 2/2/09 and 2/3/09
Karen Flores	Wintun/Patwin	530-473-3274	Letter sent 1/12/09, no response	Talked to secretary, no longer works there 1/27/09	
Marshall McKay	Wintun/Patwin	530-796-3400	Letter sent 1/12/09. Letter in response received 3/16/09: "not aware of any known cultural resources on this site." Requested that he and Leland Kinter be contacted if anything is found, with Ms. Michelle La Pena copied on the communication.	No answer, no message machine 1/27/09	No answer, no message machine 2/2/09
Leland Kinter	Wintun/Patwin	530-796-3400	Letter sent 1/12/09, no response	No answer, no message machine 1/27/09	No answer, no message machine 2/2/09
Cynthia Clarke	Wintun/Patwin	530-796-3400	Letter sent 1/12/09, no response	No answer, no message machine 1/27/09	No answer, no message machine 2/2/09
Winton Environmental Protection Agency	Wintun/Patwin	530-473-3318	Letter sent 1/12/09, no response	Talked to secretary, same office as Elaine Patterson 1/27/09	

From: Kesner Flores [mailto:calnagpra@hotmail.com]
Sent: Tuesday, February 10, 2009 4:38 AM
To: jschaeffer@williamself.com
Subject: RE: William Self Associates follow-up call

Likelyhood can be considered low to moderate. Here is the protocol in the event of a find. Thank you for the contact.

Kesner Flores
Kapay Associates, Inc.
P.O. Box 1047
Wheatland, Ca 95692

Cell Phone: 925-586-8919

Just a thought:

Things may seem difficult, the waters may be rough, but to never try, means we go no where at all. Work together and we can do anything we dream of...

Patwin Wintun Cultural Management Response Plan

(I) Management Plan

We strongly advise all parties to develop, in consultation with affected tribes, a written Management Plan for handling human remains. The plan will dictate a set of procedures and responsibilities to be implemented in the field, lab, repatriation, and actions to be taken on further discovery. All parties to the plan, including the Tribe or their designee, PATWIN Most Likely Descendent (MLD), Archaeological Consultant, and Project Lead, should provide input, support, and endorse the plan.

(II) CEQA Compliance

No physical action should be taken at the site of discovery until implementation of the lawful procedures mandated by CEQA Guidelines 15064.5(d): "When an initial study identifies the existence of, or the probable likelihood, of Native American human remains within the project, a lead agency shall work with the appropriate native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code SS5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans as identified by the Native American Heritage Commission."

CA Public Resource Code 5097.98 requires: "In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until: " 1. (The discovery) contacts the County Coroner (CC), 2. (CC) contacts the Native American Heritage Commission (NAHC), 3. (NAHC) identifies and contacts the Most Likely descendant (MLD), and 4. (Lead) initiates consultation with MLD and landowner.

(III) Comportment

All parties to the action are strongly advised to treat the remains with appropriate dignity, as provided in Public Resources Code Section 5097.98. We further recommend that all parties to the action treat tribal representatives and the event itself with appropriate respect. For example, jokes and antics pertaining to the remains, or other inappropriate behavior such as loud music, smoking, etc., are ill advised.

(IV) Training and Experience

Project directors and crew chiefs shall have thorough training and a working knowledge of skeletal anatomy and a demonstrated knowledge of Native California prehistoric burial practices. The primary archaeological consultant will be responsible for providing up-to-date CV's or resumes for all field personnel on request.

Recommended Method for Burial Recovery:

(I) Blessings

Prior to any physical action related to the remains, a designated PATWIN tribal representative will conduct prayers and blessings over the remains. The archaeological consultant will be responsible for insuring that individuals and tools involved in the action are available for traditional blessings and prayers.

(II) Excavation Methods

A number of different burial exposure techniques have a history in the discipline and reasonable adaptations of methods to special circumstances are expected. Ideally, an initial exposure of the bones will be done to confirm they are human and to determine the position, posture, and orientation of the remains. At this point, we recommend the following procedures:

(A) Tools. Ideally, all excavation in the vicinity of the remains will be conducted using fine hand tools and fine brushes to sweep loose dirt free from the exposure.

(B) Extent of Exposure. In order to determine the nature and extent of the grave and its contents, controlled excavation should extend to a full buffer zone around the perimeter of the remains.

(C) Perimeter Balk. To initiate the exposure, a perimeter balk (especially, a shallow trench) should be excavated, representing a reasonable buffer a minimum of 10 cm around the maximum extent of the known skeletal remains, with attention to counter-intuitive discoveries or unanticipated finds relating to this or other remains. The dirt from the perimeter balk should be bucketed, distinctly labeled, and screened for cultural materials.

(D) Exposure Methods. Excavation should then proceed inward from the walls of the balk as well as downward from the surface of the exposure. Loose dirt should be scooped out and brushed off into a dustpan or other collective device. Considerable care should be taken in the direct exposure of the bones, and a number of investigators have had success using dental tools or fine pointed bamboo or wood skewers, the latter preferred because they are likely to damage the bone.

(E) Provenience. Buckets, collection bags, notes, and tags should be fully labeled per provenience, and a distinction should be made between samples collected from: (1) **Perimeter Balk** (described above), (2) **Exposure** (dirt removed in exposing the exterior/burial plan and associations, and (3) **Matrix** (dirt from the interstices between bones or associations). Thus, each burial may have thee bags, "Burial 1 Perimeter Balk," "Burial 1 Exposure Balk," "Burial 1 Matrix."

(F) Records. At a minimum, the following records should be compiled in the field: (1) a detailed scale drawing of the burial, including the provenience of and full for all bones, associated artifacts, and the configuration of all associated phenomena such as burial pits, evidence for preinterment grave pit burning, soil variability, and intrusive disturbance, (2) complete a formal burial record using the consultants proprietary form or other standard form providing information on site #, unit

or other proveniences, level depth, depth and location of the burial from a fixed datum, workers, date(s), artifact list, skeletal inventory, and other pertinent observations, (3) crew chief and worker field notes that may supplement or supercede information contained in the burial recording form, and (4) photographs, including either or standard photography or high-quality (>300 DPI) digital imaging.

Please note the provisions below with respect to handling and conveyance of records and samples.

(G) Association. Association between the remains and other cultural materials is to be determined in the field in consultation with a PATWIN representative, and may be amended per laboratory findings. Records of provenience and sample labels should be adequate to determine association or degree of likelihood of association of human remains and other cultural materials.

(H) Samples. For each burial, all **Perimeter Balk** soil is to be 1/8"-screened. All **Exposure** soil is to be 1/8"-screened, and a minimum of one 5-gallon bucket of excavated but unscreened Exposure soil is to be collected, placed in a plastic garbage bag in the bucket. All **Matrix** soil is to be carefully excavated, screened as appropriate, and then collected in plastic bags placed in 5-gallon buckets.

(I) The remains are not to be cleaned in the field.

(III) Lab Procedures

Lab Methods will be determined on a project-specific basis in consultation with PATWIN representatives. However, the following procedures are recommended:

(A) Responsibility. The primary archaeological consultant will be responsible for insuring that all lab procedures follow stipulations made by the PATWIN representative.

(B) Blessings. Prior to any laboratory activity related to the remains, a designated PATWIN tribal representative may conduct prayers and blessings over the remains. Further, the laboratory consultant will be responsible for insuring that pertinent personnel and lab facilities will be available for traditional blessings and prayers.

(C) Physical Proximity of Associations. To the extent possible, all remains, associations, samples, and original records are to be kept together throughout the laboratory process. In particular, **Matrix** dirt is to be kept in buckets and will accompany the remains to the lab. The primary archaeological consultant will be responsible for copying all field records and images, and insuring that the original notes and records accompany the remains throughout the process.

(D) Stipulations for Acquisition and Use of Imagery. Photographs and images may be used only for showing location or configuration of questionable formation or for the position of the skeleton. They are not to be duplicated for publication unless a written release is obtained from a PATWIN representative.

(E) Additional Lab Finds. Laboratory study should be done making every effort to identify unanticipated finds or materials missed in the field, such as objects encased in dirt. In the event of discovery of additional remains, materials, and associations, the PATWIN representative is to be contacted immediately.

GW/KF 08-10-01
KF/RR/GW/Revised 08-11-05

Rumsey Indian Rancheria

YOCHA-DE-HE

Rumsey Band of Wintun Indians

March 3, 2009

James M. Allan, Ph.D., RPA
Vice-President, Principal Project Director
William Self Associates, Inc.
P.O. Box 2192, 61 Avenida de Orinda
Orinda, CA 94563

Re: Shell CO_2 Sequestration Project in Solano, California

Dear Mr. Allan:

Thank you for your letter dated, January 12, 2009, seeking information regarding the Shell CO_2 Sequestration Project in Solano, California. Based on the information provided, the Rumsey Band of Wintun Indians, of California is not aware of any known cultural resources on this site. However, as the project progresses, if any new information or historic remains are found, we do have a process to protect such important and sacred artifacts. It is always suggested that a tribal monitor be present for any earthmoving activities.

Please contact the following individuals if tribal cultural items or Native American human remains are found:

Mr. Marshall McKay
Chairman, Rumsey Band of Wintun Indians, of California
Office: (530)796-3400, mmckay@rumseywintun-nsn.gov

Mr. Leland Kinter, MLD
Office: (530)796-3400, lkinter@rumseywintun-nsn.gov

And copy all communications to:
Ms. Michelle LaPena,
LaPena Law Corporation, michelle@lapenalaw.com

Thank you for providing us with this notice and opportunity to comment.

Sincerely,

Marshall McKay
Tribal Chairman